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ABSTRACT

The community impacts of the proposed higher education capital improvement appropriations for the State of Ohio for the period 1975-77 are identified. These impacts consist of increases in employment due to both direct and indirect effects, increases in Gross Regional Product (GRP) due to income effects, and increases in GRP due to inter-industry effects. The aggregate impact of the proposed $248.5 million capital improvements proposal for higher education on the state is conservatively estimated to be a maximum of $302.3 million increase in GRP due to inter-industry effects, and additional $365.7 million due to income-consumption effects, and 38,000 new jobs created. It was found that in each of the individual communities affected by the budget proposal, a positive impact on employment and income could be expected. The size of this impact is a function of, among other things, the number of dollars expended. The community impacts study is organized by county. Tables are included on employment effects, income multiplier effects, and inter-industry multiplier effects. (Author/LBH)

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THE IMPACT OF THE HIGHER EDUCATION CAPITAL IMPROVEMENTS PROGRAM ON OHIO COMMUNITIES

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HE 006 793

FROM A REPORT
BY
DANIEL Z. CZAMANSKI
AND
PAUL S. LANDE

OHIO BOARD OF REGENTS

MAY 1975

The Impact of the Higher Education Capital Improvements Program on Ohio Communities

This Report Has Been Extracted From A Study Submitted to the Ohio Board of Regents by:

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The data contained in this report has been updated and modified by Ohio Board of Regents' staff members, Lawrence J. O'Brien and Jack Probasco to reflect current capital improvements recommendations before the Ohio General Assembly.

May, 1975

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1. Introduction

Too frequently the dubious claim is made that higher education institutions demand excessive portions of our public expenditures. It is a rare instance when such claims stem from a thorough analysis of the relationship of educational dollars to the regional or state economy. University budgets, and capital budgets in particular, not only contribute to the quantity and quality of skilled manpower that a growing state requires, but they also have a very immediate and direct impact on the quality of life within Ohio. Dollars expended on higher education ultimately become income in the pockets of Ohioans. In such a process of transition, these dollars create permanent jobs. Above all, they commence a series of multiple effects in the region causing the state's economy to grow.

The following pages are far from being the thorough analysis that the above calls for. They do, however, present a rather brief explanation of a framework which is currently missing in the evaluation of educational budgets for capital development.

It must be emphasized from the outset that the needs of universities and colleges and those they serve should be the primary criterion for evaluation of proposed educational budgets. Beyond this, however, state-assisted universities and colleges are economic-productive activities which form an integral part of the Ohio economy. They consume inputs from industries in the state, they provide jobs and income for Ohio's citizens, and they supply goods, services, and skilled labor force for all segments of Ohio's economy. Educational budgets, then, should be considered in the same vein that one would consider the investment policies of any large industry in Ohio. The effects on the region of a contracted or expanded university budget are not at all unlike the effects of similar actions by the General Motors Corporation or any other large concern.

In addition, educational budgets are subject to our control. Through elected officials, Ohioans can dictate not only the size of the educational budget, but also, its distribution. Investments in the facilities of educational institutions can clearly be directed so as to promote regional growth and prosperity. In order to do so, however, we must study more thoroughly the relationships of the budget to the state economy.

In general, two major types of economic multiple effects, or multipliers, can be expected to accrue to the communities in which campuses of higher education institutions are located. The two types are distinguished by the duration of their impact upon the localities. Inter-industry effects and income-consumption multiplier effects are the principal effects which eventually dissipate without affecting the structure of the regional economy. Other multiplier effects, by far

the more difficult to assess, are associated with enhancement of the environment and the creation of appropriate features in it for the attraction of high-technology and other tertiary industries. Such effects usually result in permanent shifts of the industrial structure.

Inter-Industry Multiplier Effects

Inter-industry multipliers are chain effects associated with expansion of an industrial activity through its backward and forward linkages to other activities. The expansion of a university capital budget which results in a new building or renovation of an old structure on a campus means that a contractor's demand for materials from other firms is increased. Whether or not the required materials need to be supplied through new production, they have an immediate effect on the supplier, who in turn will be motivated to expand his productive activity. This chain continues, producing effects which at each subsequent turn become smaller. Nevertheless, the total multiplier, or effect, on the regional economy can be quite substantial. It is, of course, obvious that the size of the multiplier is crucially dependent upon the extent to which the region has an "open" economy, or the extent to which the supplies will arrive from outside the region. Even in this case, however, interregional feedback effects may be such as to affect the campus region favorably. It is quite possible that the whole effect may be internalized within the State of Ohio, especially if the feedback effects are restricted to firms located with the state.

Emperical data regarding inter-industry multipliers for regions within the United States are available. Table A lists a number of emperically-derived multipliers for certain states as well as some particular standard metropolitan areas. The highest and lowest multipliers of Table A have been employed within this study in order to estimate the probable range of impacts due to capital expenditures on the gross regional product within Ohio.

Income-Consumption Multiplier Effects

The second type of short-run multiplier effect is associated with the increase in income of construction and related workers due to an increase in the capital budget. At least a portion of the increased wage-bill will result in more consumer goods being sold in Ohio. The rest of the wage-bill is saved and serves then to augment the stock of money available for investment. In view of the recent shortage of investible funds in Ohio and the consequent slump in at least one major U.S. industry, (i.e., housing construction) this type of effect is of major importance to the region. The increased spending on consumer goods may result in chain effects within the state. Also in this respect, however, one should not ignore potential interregional feedback effects within the state. Ohio, which has a varied industrial base, is a good candidate for such chain effects.

TABLE A: Inter-Industry Multipliers for Selected Regions[1]

Philadelphia, SMSA	2.21154
New York, SMSA	2.17264
Kansas, State	1.97073
California, State	1.70973
Mississippi, State	1.39651
Providence, SMSA	1.21695
New Orleans, SMSA	1.14127

[1]Source: Stan Czamanski and Daniel Z. Czamanski, Study of Impact, of New Industries Upon Regional Economies (Halifax: Dalhousie University, Institute of Public Affairs, forthcoming).

NOTE: The choice of regions for these estimates was largely governed by the availability of comparable input-output tables.

Income-Consumption multipliers for the nation have varied substantially since 1930 (Table B). For this study the two lowest values (2.36 and 3.27) in Table B are employed in order to calculate the possible range of effects due to the income-consumption multipliers.

TABLE B: Income-Consumption Multipliers for Selected Years for U.S.

Year	Multiplier
1930-31	9.55
1940-41	2.36
1950-51	4.48
1960-61	3.27
1964-65	10.03
1970-71	7.63

Source: Based on income and consumption data from Milton Spencer, Contemporary Economics (N.Y. Worth Publishers, 1971).

Additional Income-Related Multiplier Effects

Incidental to the income-consumption multipliers are labor market effects. These work in a manner similar to the income-consumption multipliers. In order to increase their production, suppliers of inputs into the construction process will hire more labor, who will spend their income, thus creating more jobs in Ohio. All this is again significant in view of the recent economic history of Ohio and of the U.S. This type of effect, sometimes termed an investment multiplier due to the construction of new facilities and housing, is an important determinant of urban and regional growth. The importance of this type of effect is primarily due to the long period of time over which it extends. A construction project with a life of several years is a significant component of this type of multiplier, since machinery and equipment are almost always imported into the smaller regions. Ohio, with its broad industrial base, benefits from this investment multiplier effect.

Other similar multipliers are associated with the extension of urban structures and services due to the needs of new or expanded facilities. In this category are water supply, sewerage, municipal power, construction of new roads and streets, and urban mass-transit systems. All this typically results in a growing tax base, tax revenues and demand for urban preventive services, such as fire and police, and population-orientated activities, such as education, health, and welfare services. These may be termed public sector multipliers.

Aside from acknowledging that these other types of multiplier effects do exist, the present study does not incorporate their impact and thus the estimates are somewhat understated.

Employment Multiplier Effects

The proposed capital expenditures at more than forty institutions throughout Ohio will create jobs and materially reduce the unemployment rates among Ohio's workers. This is a positive result especially when viewed in light of today's unemployment problems.

Any increase in demand affects the regional and state economies in several different ways. The capital expenditures increase employment in the first instance via the number of jobs created directly in the construction industry (direct effects). Secondly, the indirect effects are due to increased production in those industries that supply material and goods directly or indirectly to the construction industry to cope with increased demand. Thirdly, there is an induced effect due to increased consumption

by those households enjoying increased incomes generated by the new productive activities. There are also additional effects such as that due to increased revenues and expenditures of local governments having to serve a larger economy and the effects due to an increase in the demand for investment equipment to produce more construction material and goods. Neither of these latter two effects were included herein.

The multipliers used in estimating the number of jobs created from the construction wages paid from the capital expenditures are shown in Table C. Based upon the recent trends in higher education capital construction it is assumed that approximately 45 percent of the expenditures will be for wages in the construction industry with the remaining 55 percent being for supplies and material. The man years (jobs) directly created from the construction wages (as shown in Tables 1A - 1I in the Appendix) are combined with those jobs indirectly created or induced as a result of the supplies and materials used in the capital construction to produce the total employment impact.

TABLE C: Employment Multipliers for Selected Industries*

Industry	Low Estimate	High Estimate
Agriculture	1.1873	1.4483
Mining	1.2125	1.9110
Manufacturing, capital goods	1.7370	2.9677
Construction		
Residential	1.7681	2.8405
Non-residential	1.6666	2.7500

Source: Stan Czamanski, Regional Science Techniques in Practice (Lexington: D.C. Heath and Company, 1972), p. 221.

*These estimates are obtained from data on Nova Scotia.

Table D contains employment multipliers used to calculate the employment impact of the supplies and material portion of the capital expenditures. These data illustrate the number of jobs created per one million dollar expenditures by various governmental agencies.

TABLE D: PUBLIC SERVICE EXPENDITURE EMPLOYMENT MULTIPLIERS*

	Employment Per One Million Dollar Expenditure					
	Direct Effects	Indirect Effects	Induced Effects	Local Government Effects	Indirect + Induced	Total Effects
Federal Government						
Defense	136	45	78	26	123	285
Civil	177	39	85	29	124	330
Provincial Government	56	87	63	25	150	231
Municipal Government	128	47	62	24	109	261
Education	131	51	76	27	127	285
Hospitals	113	48	67	25	115	253

Source: Stan Czamanski, Regional Science Techniques in Practice (Lexington: D.C. Heath and Company, 1972), p. 217.

*These estimates are obtained from data on Nova Scotia

Impact of Jobs Created

It can be safely asserted that the creation of new jobs through the expansion of the capital expenditures budget will reduce the number of individuals collecting welfare payments from the State of Ohio. This will result in a reduction in the total expenditure of the state on welfare, and therefore, this amount, together with new tax revenues generated, can be considered a self-subsidy generated by the capital expenditures budget.

In addition, those individuals who were previously unemployed will tend to spend larger proportions of their income than has been generally assumed in this study. This implies the multipliers used to predict the community impacts will tend to be underestimated and, therefore, the projections derived are relatively conservative.

Summary of Capital Expenditure Impacts

What can Ohioans expect from the proposed capital improvements budget for higher education? It has been proposed that between the year 1975 and 1977 Ohio spend $48,507,000 on capital improvements. Such expenditures would result in approximately 6700 jobs[1] created directly in the construction industry with an equivalent wage-bill of $111,828,150, and with $136,678,850 being spent on materials and other construction industry inputs. These are the direct effects calculated only on the basis of the typical breakdown of a construction dollar. The indirect effects add considerably to the significance of this type of budget. For example, total employment or the number of jobs, in Ohio, will grow by between 22,500 and 38,000 jobs. The inter-industry effect yields an addition of between $156.0 million and $303.3 million to the gross regional product. The income-consumption multiplier means that aggregate income will grow by at least $263.9 million and at most by $365.7 million. Table [illegible] presents further details. The statewide effects are illustrated in Figure 1.

In the following pages these types of effects are broken down into their geographic incidence according to the proposed distribution of the capital improvement budget. Because of the constraints imposed by time and resources, no attempt has been made to delimit functional regions. All analyses proceeded on the basis of published data.

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[1] In the following "jobs" means equivalent man-years.

TABLE E: Direct and Indirect Effects on the Ohio Economy

	1975-1977
Inter-Industry Effects	
High	$156.0 million
Low	$302.3 million
Income-Consumption Effects	
High	$263.9 million
Low	$365.7 million
Employment Effects	
High	38,000
Low	22,500

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO

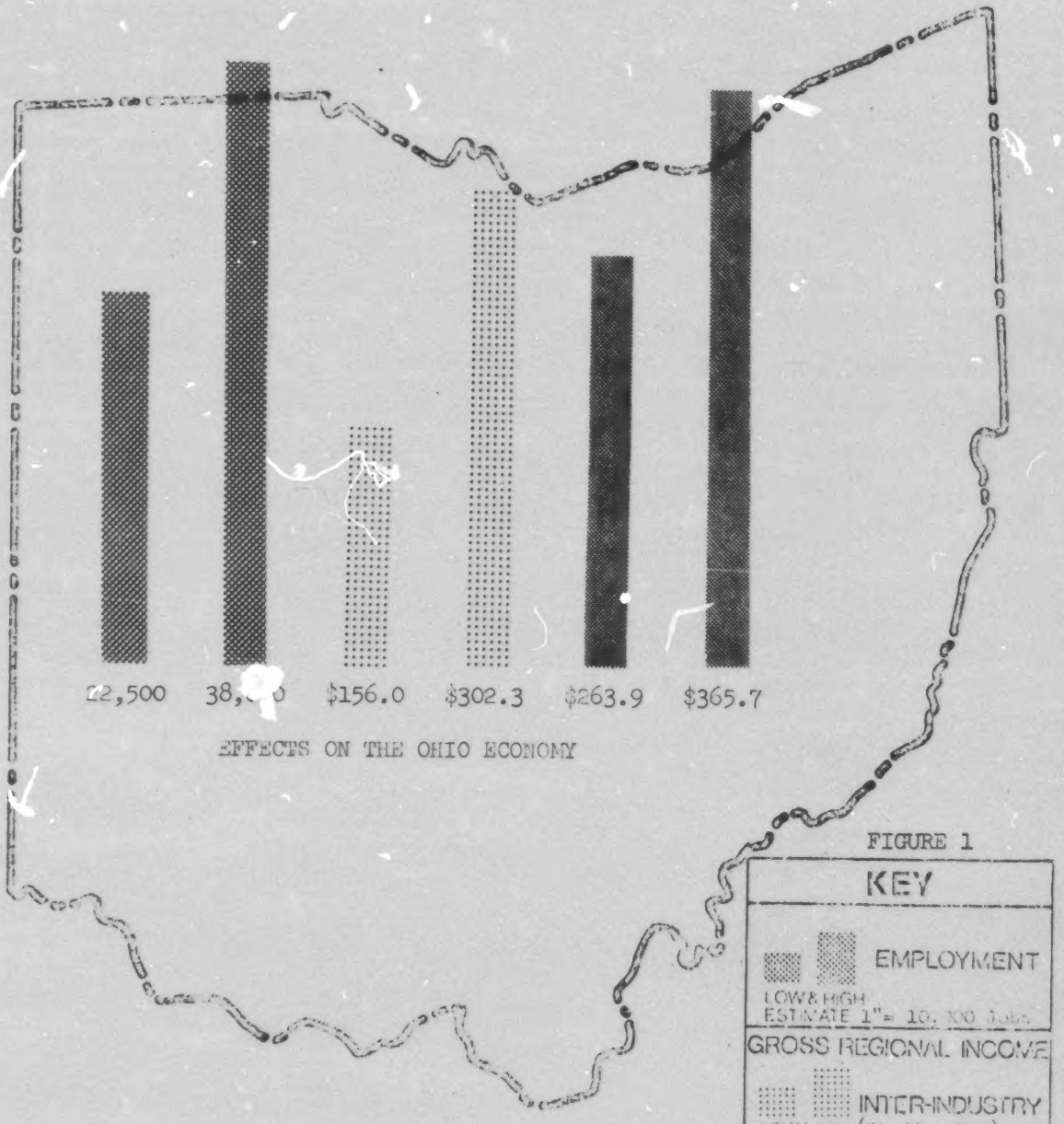

FIGURE 1

ANALYSIS OF COMMUNITY IMPACTS

ASHTABULA COUNTY

Astabula Branch of

KENT STATE UNIVERSITY

Ashtabula County is located in the northeast sector of Ohio, approximately 50 miles east of Cleveland. The Ashtabula branch of Kent State University is located in the City of Ashtabula, which is also the county seat.

The median family income of the county is $9894, while the mean income of families with a female head was $6111. The mean family income or incomes less than poverty level was $1844, with 7.5 percent of the county's families falling into this poverty classification.

The Cleveland SMSA region, of which Ashtabula County is a part, experienced an overall increase in employment of .5 percent. However, the region had a severe problem in the construction industry, as employment dropped 8.6 percent in the 1974 calendar year. Latest unemployment figures of April 1974 indicated the area was experiencing an overall unemployment rate of 4.9 percent, but it seems appropriate to estimate that with the worsening economic conditions the area most likely approaches the 6.1 percent statewide unemployment rate registered in December 1974.

In terms of housing, it appears that the county's housing stock is much older than the average of the other counties which was sampled. Statistics indicate that approximately 86 percent of the housing units in Ashtabula County were built before 1960. With 4.59 percent of the labor force listed as laborers, and a decrease of 8.6 percent in employment in the construction industry, the future of construction in the Ashtabula area seems rather clouded.

The capital expenditures budget calls for $100,000 to be spent on the Ahstabula County Campus. This expenditure would result in 3 jobs being created in the construction industry for Ashtabula County. Indirect induced effects on employment in the county would range from 7 to 14 additional jobs being created. The income effect on the Gross Regional Product during the 1975-1977 period would vary from a high of $147,150 to a low of $106,200. The inter-industry effect of the proposed expenditure ranges from $62,770 to $121,635.

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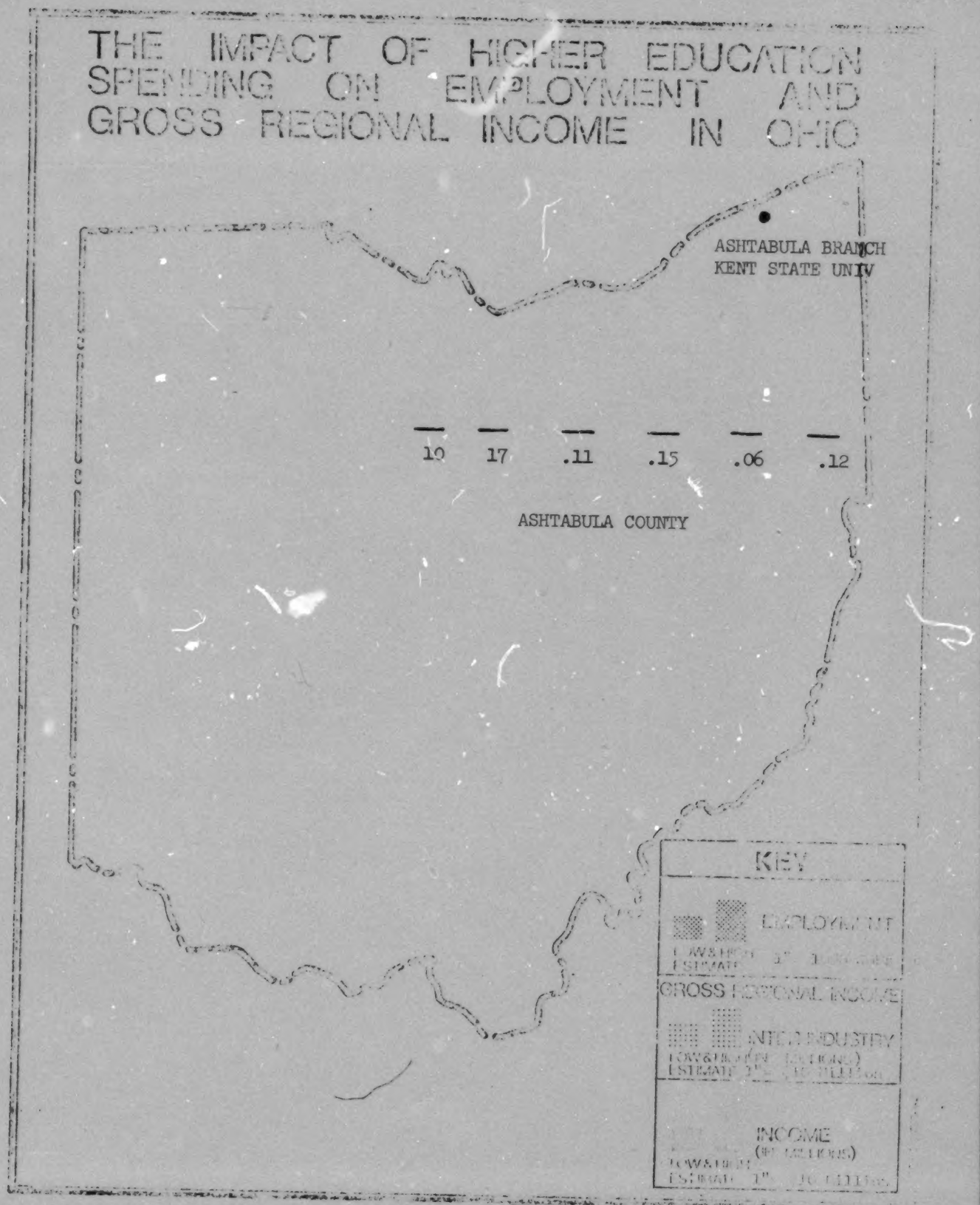

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ATHENS COUNTY

a) OHIO UNIVERSITY

b) HOCKING TECHNICAL COLLEGE

The Ohio University is located in Athens in the County of Athens in the south-western tip of the state of Ohio.

Athens is a relatively poor community with a median family income of $8,455.00. The mean income of families with female head of family is $5,723. While mean income of poor families, as defined by the Census Bureau, was $1,974. In Athens county there are 9.9 percent poor families. Partly this may be explained by the large proportion of young people in the county who have not achieved peak earning potential. In Athens county 29.11 percent of the population is between the ages of 15 and 21, as compared with 16.66 percent average of all Ohio counties. This is further noticeable since the median school years completed are 12.2 for both males and females. The University, thus, has a very noticeable presence in Athens.

The distribution of the labor force by occupation in Athens County is fairly atypical. 20.05 percent of the labor force is accounted for by professional and technical workers while only .55 percent of the workers were farmers. 5.24 percent of the labor force are laborers and 13.01 percent are craftsmen. These figures are somewhat above average for Ohio counties indicating that in Athens county one would expect a fairly active construction industry. This is further emphasized by the age structure of housing stock in this county. 60.82 percent of the stock has been built prior to 1939 far above the average for all Ohio counties. At the same time 16.34 percent of the stock has been built between 1965 and 1968. This compares favorably with the 8.16 percent for all counties.

The capital improvement budget calls for some $4,175,000 to be invested on the Ohio University campus. Such expenditures would mean 137 jobs being created in construction in Athens county. In addition the indirect employment effects would account for at least 427 workers but not more than 722 workers. The income effect on the Gross Regional Product during the same years would range from a low estimate of $4,432,000 to a high estimate of $6,141,060. The inter-industry effect would range from a low estimate of $2,621,497 to a high estimate of $5,079,907.

Hocking Technical College is also located in Athens County in the City of Nelsonville.

The capital expenditures budget calls for $2,900,000 to be spent on campus improvements. The direct effect of such an expenditure would be the creation of 95 construction jobs. The inter-industry multiplier would have the effect of increasing the Gross Regional Product by an amount of from $1,820,325 to $3,527,406. The income effect generated by the expenditure would bolster the GRP by an amount ranging from a low of $5,575,500 to a high of $7,725,375. The labor market in the county would be enhanced by the creation of jobs estimated to be a minimum of 297 and a maximum of 501.

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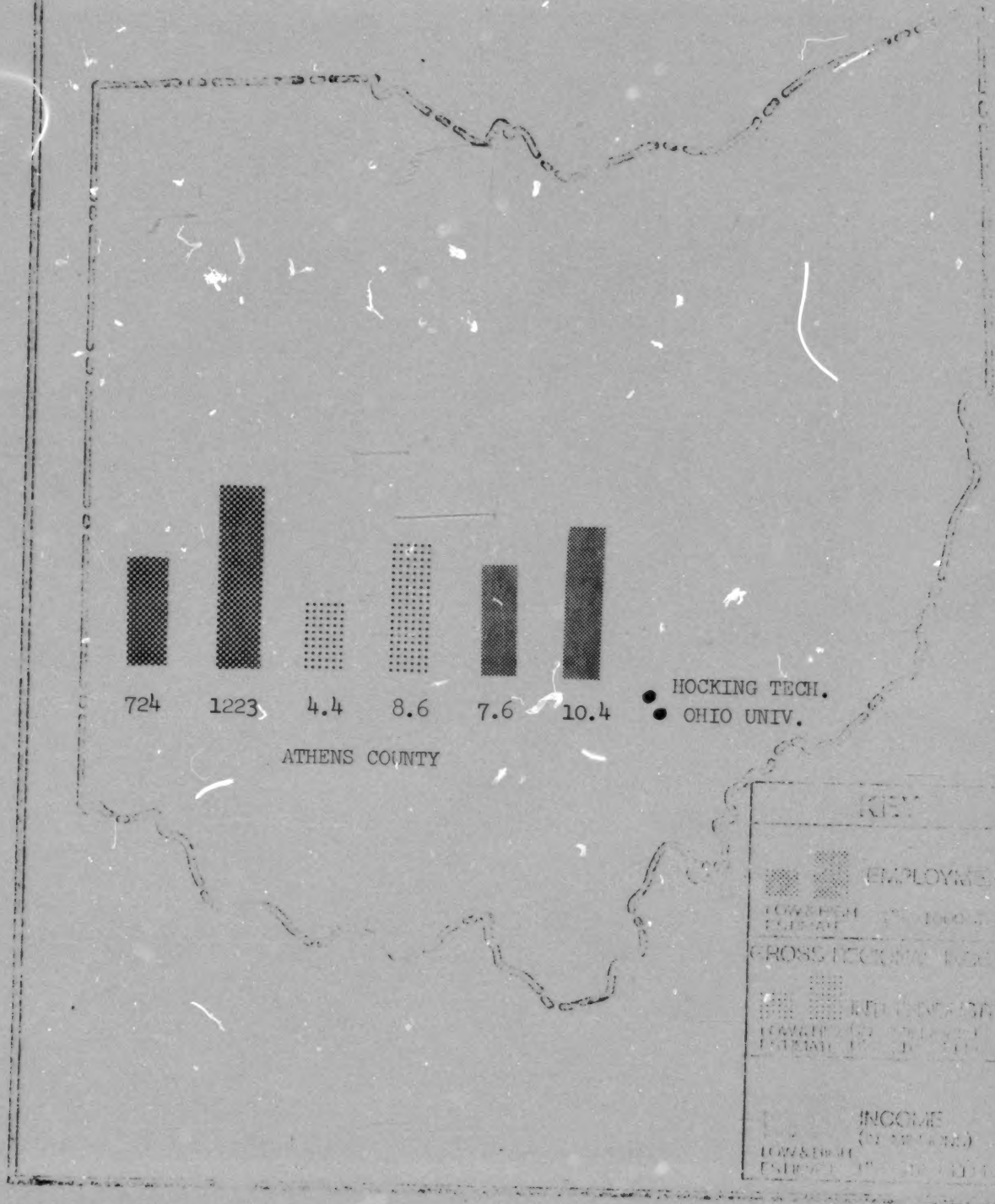

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BUTLER COUNTY

MIAMI UNIVERSITY

23

Butler County is located in the southwest section of Ohio just north of metropolitan Cincinnati.

The county is characterized by relatively high income levels, with the median for the county at $10,388 and a mean of $11,255, thus the area exhibits an overall prosperity. Although the mean poverty level income is nearly consistent with the rest of the state, the percent of families under poverty level is at a respectful low of 7%.

Professionalism is high in this county, consistuting 14.11% of the total work force. When one further looks at the labor force it is apparent that the bulk of employment is in clerical, skilled, and operative laborers, which make up nearly half of the county labor force. Service workers other than private household make up over 11% of the total labor force. None of the other labor force types constitute a portion of over 7% of the total.

Although the age distribution in Butler County is almost typical of Ohio, the university population has affected this distribution somewhat. In the 15-21 year age category, there is 15.[illegible]2% of the population as compared to the state average of 13.66%. Otherwise the only other difference is in the "above 60" group, where there is a disproportionate low of 11.44% as opposed to the state average of 13.27%.

Educational achievement is not substantially affected by the presence of this university. 48% of the males and 47.6% of the females are high school graduates with the median school years completed at 11.7.

Characteristics of housing indicate that the stock of this area is younger than the state average. 39.62% of the housing in Butler County was constructed prior to 1940. This contrasts sharply with a mean of 49.93% of the housing stock constructed before 1940 for the state. When the value of year round housing units is compared to the rest of the state, it becomes clear that the Butler County structures are considerably more valuable than the rest of the state, with a value in Butler County of $17,000 as opposed to the average of $15,711 for the state.

The capital improvements budget in Butler County is $18,450,000. The indirect impacts in income will be at least $19,593,900, and possibly as much as $27,149,175.

The inter-industry multipliers will amount to at least $11,581,037 and may reach as much as $22,441,602.

Employment will benefit substantially with 551 jobs directly created and as many as 3,038 jobs indirectly created.

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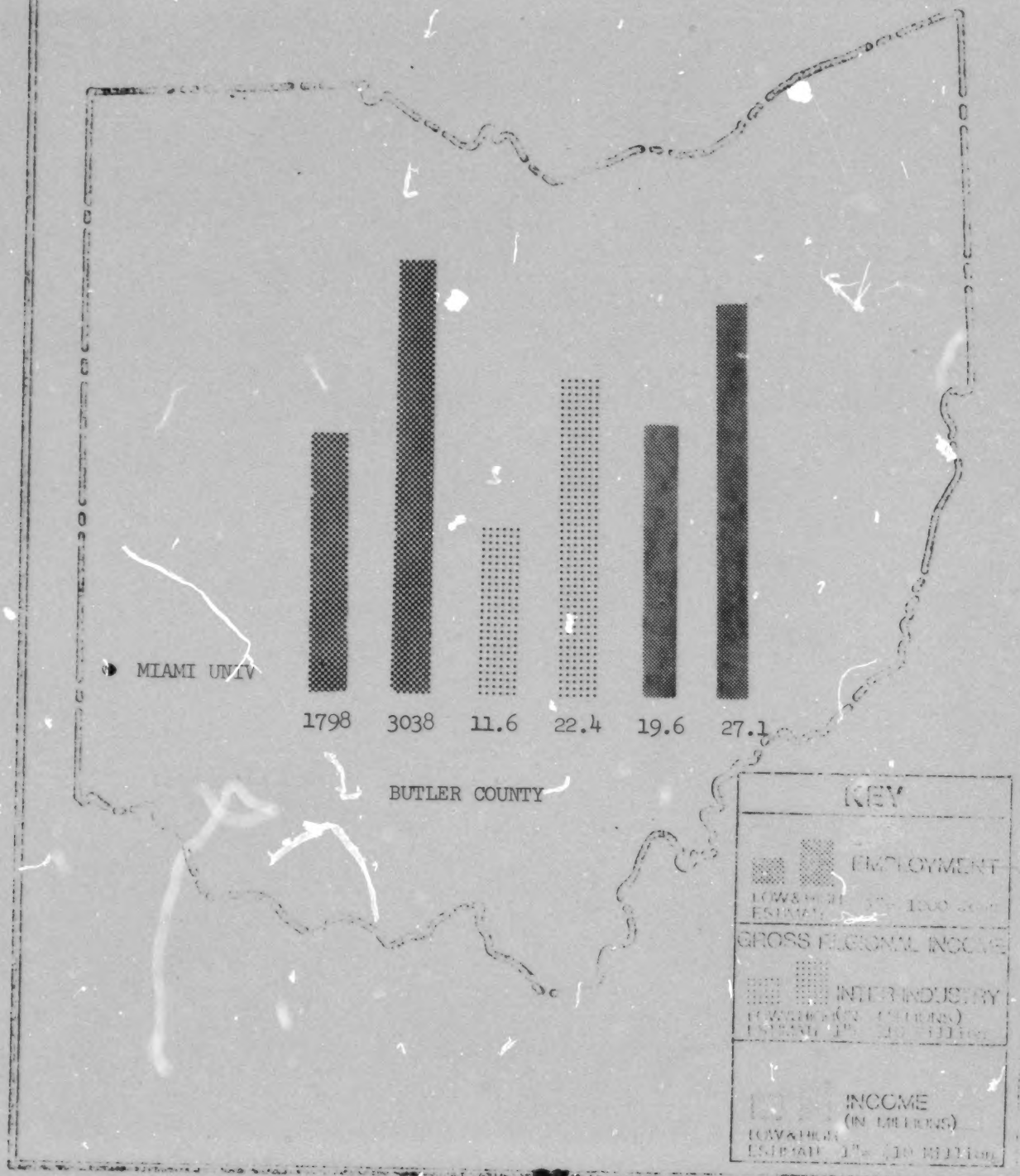

CLARK COUNTY

CLARK TECHNICAL COLLEGE

Clark Technical College is located in the City of Springfield, in Clark County. It is located in the west-central part of Ohio.

Clark is a fairly typical Ohio county. Most of its socioeconomic indicators are indicative of the whole state. The median family income in Clark County is $9,996. The mean income of families with female head is $6,349, while mean income of poor families is $1,834. In Clark County there are 7.3 percent poor families. This statistic is partly due to the typical age distribution of the population and its occupational structure. The biggest portion of the population of the county is in the peak earnings group of between 35 and 59 years of age. The median years of school completed in the county is 12 for both males and females.

Over 50 percent of the labor force is accounted for by three professional categories: clerical and kindred workers (18.17 percent), operatives except transport (18.08 percent), and craftsmen, foremen and kindred workers (16.61 percent). This distribution would indicate a fairly diversified industrial base with 3.6 percent of the work force classified as laborers.

The characteristics of the housing stock indicate that the construction industry in Clark County has traditionally not experienced drastic fluctuations in output. Nevertheless, since 1969, housing construction has slowed down. In Clark County only 2.61 percent of the stock was built in 1969, as opposed to 2.98 percent for all Ohio counties.

The capital improvements budgets calls for some $350,000 in construction which would mean that 10 jobs can be created directly by this investment. In addition, through the employment effects between 24 and 47 jobs can be created in related industries. The income multipliers would mean that the GRP would grow by between $371,700 and $515,025. The inter-industry effect will translate into a low estimate of $219,694 and high estimate of $425,721 growth in the Gross Regional Product.

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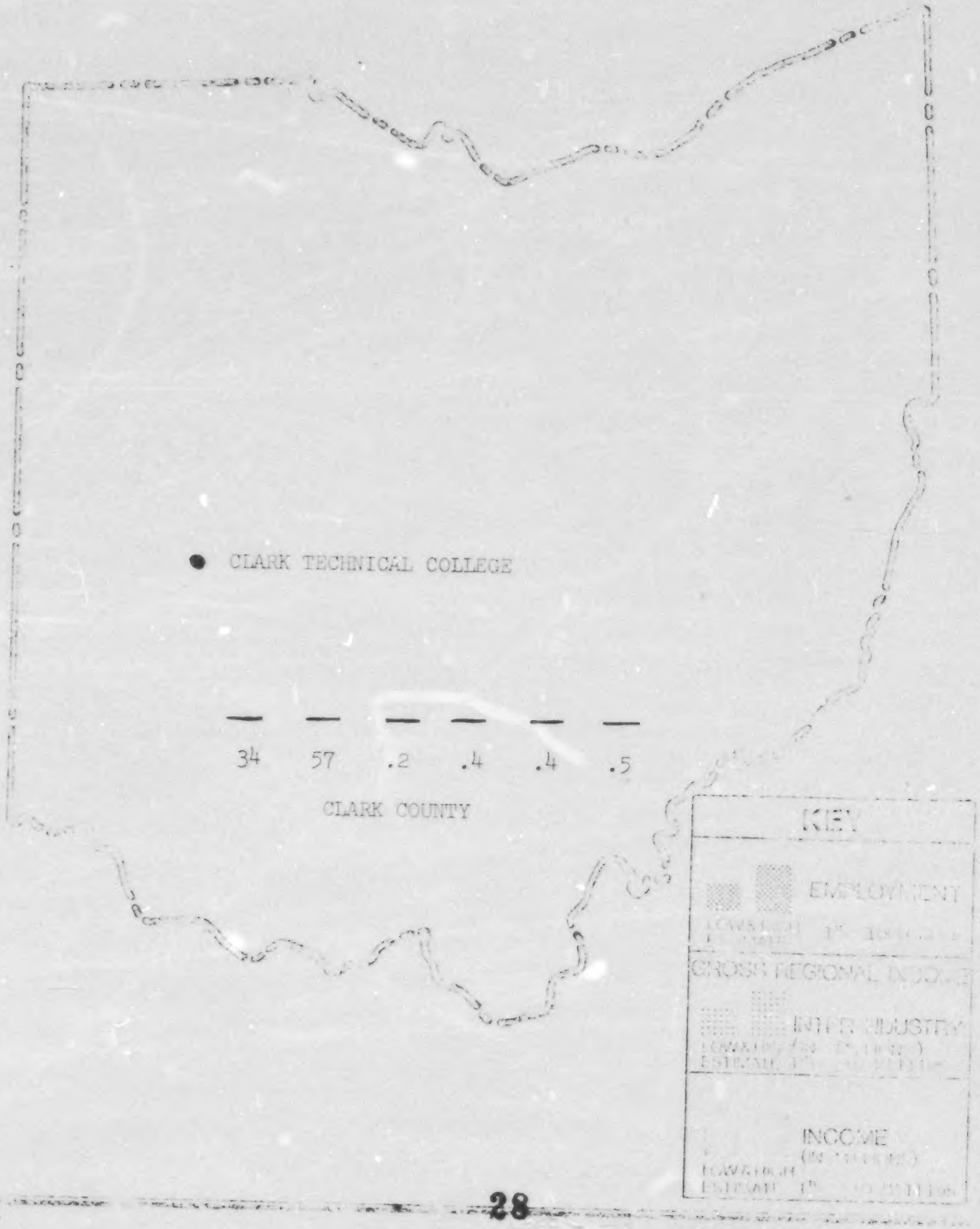

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CLERMONT COUNTY

CLERMONT GENERAL AND TECHNICAL COLLEGE

29

Clermont General and Technical College, a branch of the University of Cincinnati, is located in the City of Batavia, Clermont County. It is located in the southwestern part of Ohio.

Clermont County has a population that is slightly younger than that of the state as a whole, with 34 percent of the population 14 years of age and younger, and only 9.8 percent older than 60 years of age. With a lower than average number of retired citizens and a large number of workers in the 35-59 age bracket, it is not unusual that the average median family income in Clermont County is $10,204, significantly higher than the statewide mean of $9844. Seven percent of all families in the county had income less than poverty level, compared with 7.9 percent statewide. The mean family income of these below poverty level families is $1989. The median school years completed is 11.0 for males and 11.4 for females with slightly over 40 percent of each being high school graduates.

A majority of the labor force is accounted for in three categories: operatives, except transport (21.5 percent), craftsmen, foremen and kindred workers (15.7 percent). Professional, technical and kindred workers make up 10.5 percent of the labor force, while 4.2 percent are categorized as non-farm laborers, indicating a rather diversified industrial base.

The housing characteristics of Clermont County show a younger than average housing stock. Only 32 percent of the homes in the county were built before 1940, as opposed to 50 percent statewide. Housing starts in 1969 were 3.4 percent of the total housing stock, greater than the 3.0 state average.

The capital improvements budget calls for $60,000 in construction. This will create 2 jobs directly and through the multiplier effect will create between 4 and 9 additional jobs. The income multipliers show the GRP to grow between $63,720 and $88,290. The inter-industry effect will translate into a low estimate of $37,662 and a high of $72,981 growth in the Gross Regional Product.

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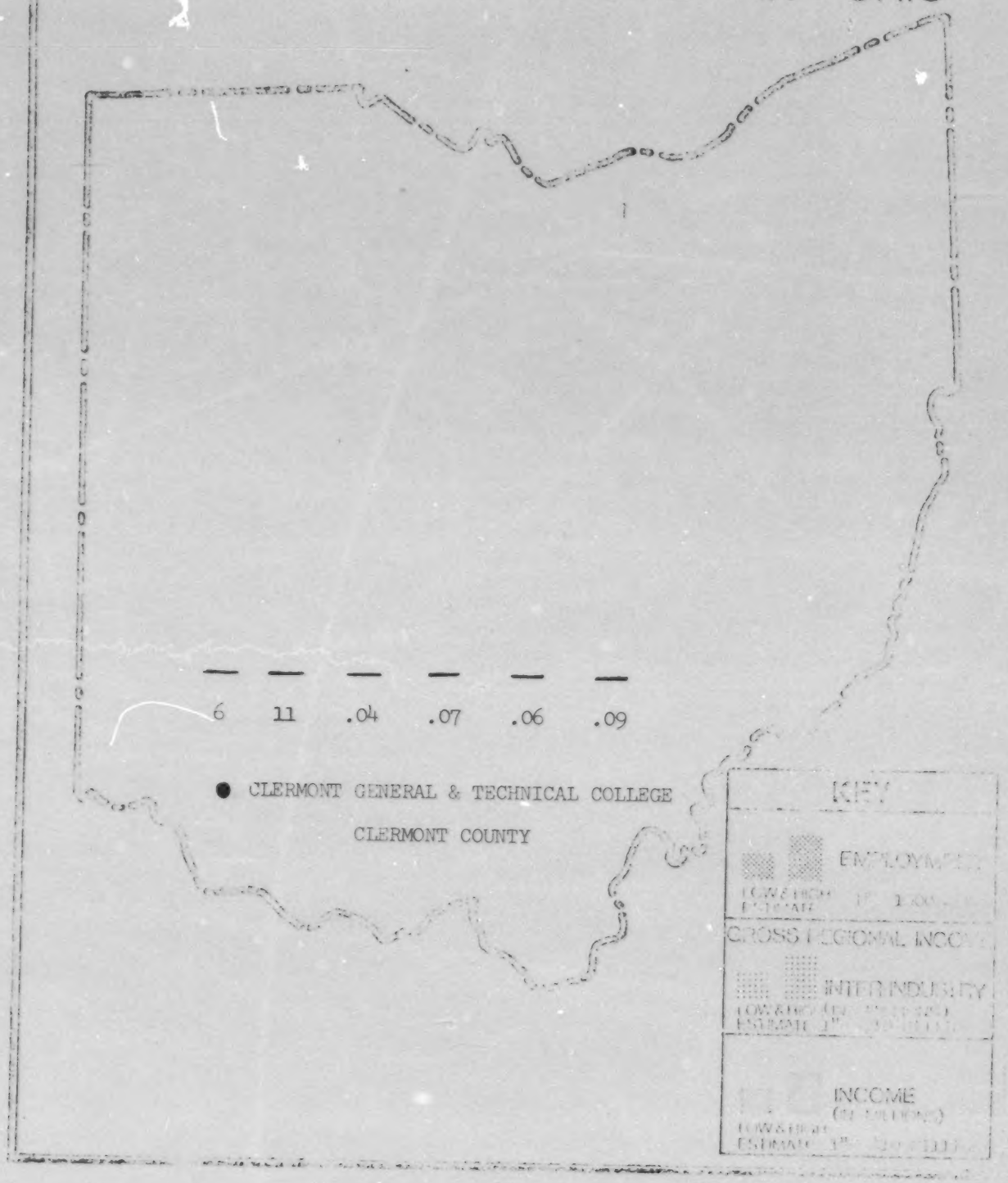


CLINTON COUNTY

SOUTHERN STATE GENERAL AND TECHNICAL COLLEGE

Clinton County is located directly northeast of the metropolitan district of Cincinnati. The prosperity of the county has been somewhat limited as manifested in the median family income of $8804 as compared to the state median of $9844. The mean income of all families in Clinton County is $9482 as opposed to that of families with female heads which is $5892. 10 percent of all families have income less than poverty level with their mean at $2013.

The labor force distribution has few concentrations. 11.83 percent are professional or technical workers, but the largest sector is composed of craftsmen and foremen, at 16.11 percent of the total force with 15.89 percent of the labor force working as operatives other than transport. Farmers and farm managers are highly prevalent in this county, with 6.43 percent of the total in this occupation type.

The educational achievement of residents in this county is near normal for Ohio, with 52.9 percent of all males graduating from high school and 57.9 percent of all females graduating. The median school years completed is 12.1 for males and 12.2 for females.

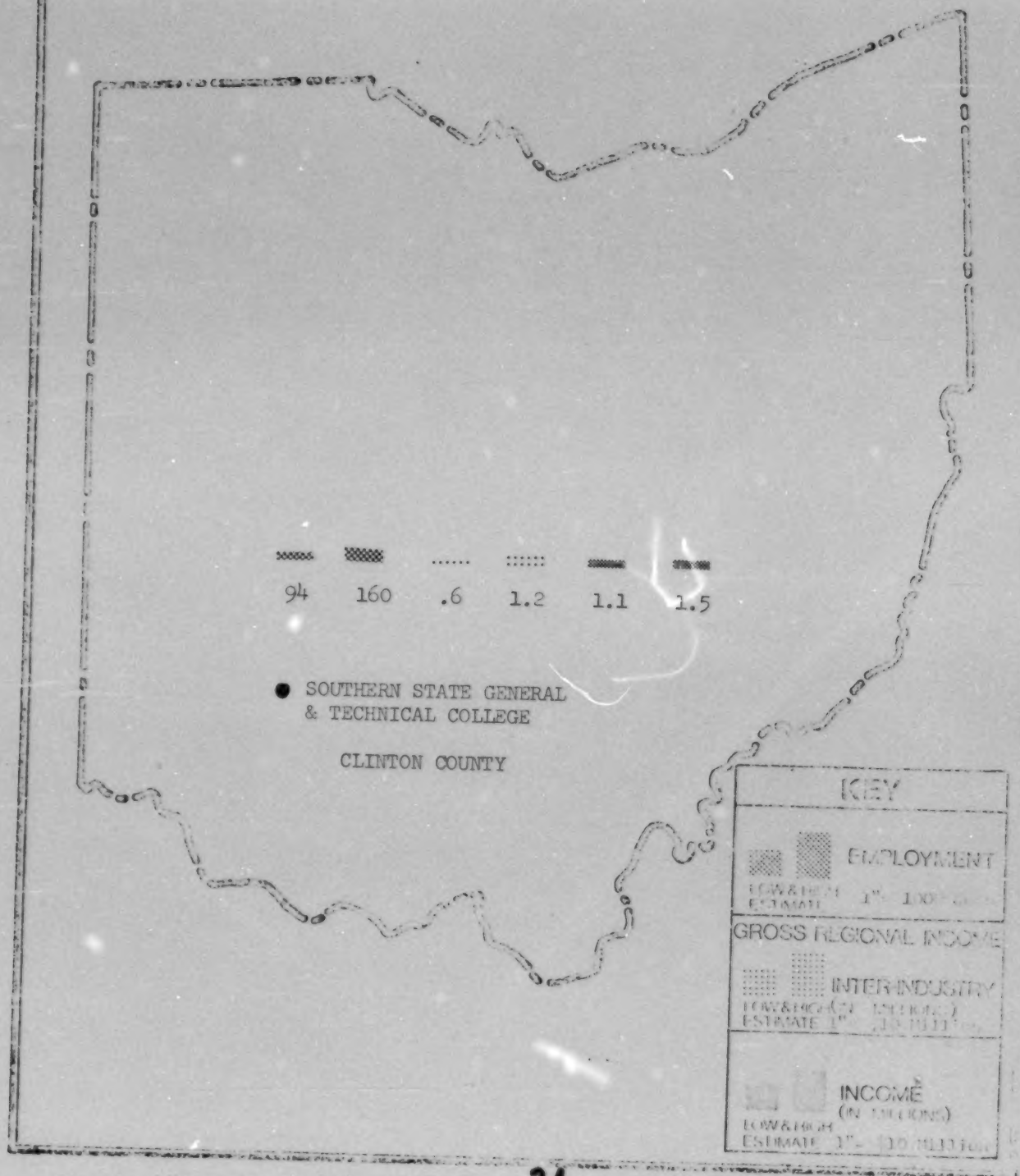
The age distribution of the population of Clinton County is near normal for the state with no age group varying more than 1.5 percent from the normal distribution.

Housing in this county is significantly older than the rest of the state, and somewhat less than usual in dollar value, with a median value of $13,100. The ages of housing in this county vary slightly with the typical ages of housing for the rest of the state except in the sector of houses built before 1940, Clinton County has 59.24 percent of its stock as opposed to the mean of 49.93 percent for the rest of the state.

The Capital Budget of $1,000,000 for Southern State General and Technical College will result in 28 jobs being directly created. When one considers the multiplier effects, this results in at least 66 and at most 132 additional jobs indirectly created or induced.

The inter-industry multipliers will amount to at least $627,699 and may reach as much as $1,216,347 while the income effect generated by this expenditure will result in an increase of $1,062,000 to $1,471,500.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



COLUMBIANA COUNTY

KENT STATE UNIVERSITY

(EAST LIVERPOOL CAMPUS)

Columbiana County is located where the Ohio River begins to run along the southern boundary of the state.

The median family income is somewhat less than the state median with $9032 for the county as compared to $9844 for the state. The county mean income is $9874 for all familes and $6005 for families with female heads. Although 7.8 percent of all families are below poverty level, this is very close to the state average of 2.9 percent. The mean income of the families living in poverty is equal to $1841.

The labor force is marked by great numbers of blue collar workers, craftsmen and foremen, who make up 17.97 percent of the labor force, operatives, except transport, constitute 22.18 percent of the labor force, and service workers are 10.47 percent of the labor force. Compared to this, only 9.68 percent are professional or technical workers and 5.88 percent are managers.

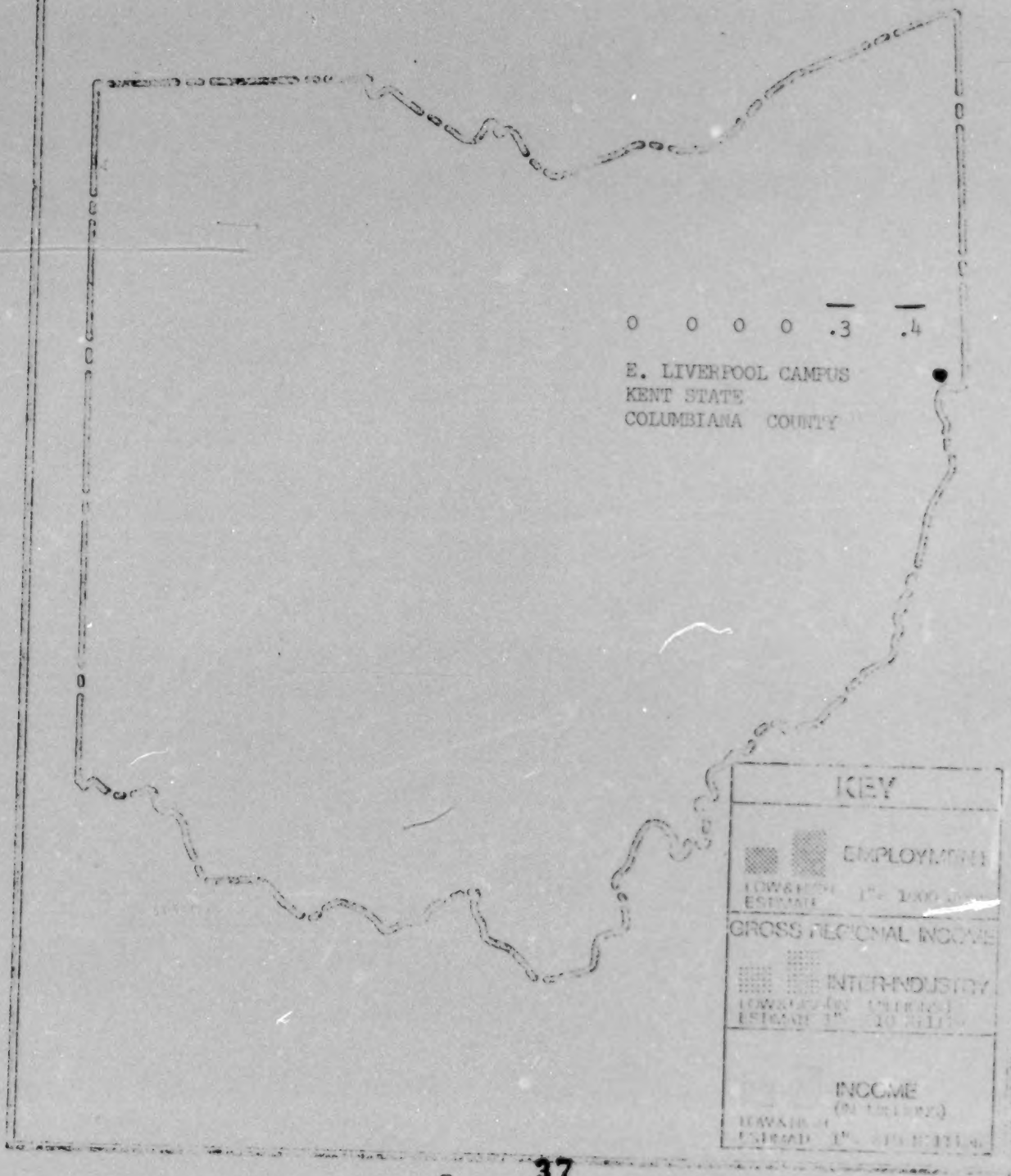
The proportion of high school graduates is 45 percent for males and 48.7 percent for females, while the median school years completed is 11.3 for males and 11.8 years for females.

The age distribution in Columbiana County is nearly consistent with the rest of the state varying less than 2 percent for each group.

The housing is considerably older here than in the state in General. 60.70 percent of all housing in Columbiana County was built before 1940, this is compared to 49.93 percent statewide. In the other age sectors there is a conspicuous lack of new housing. This is perhaps reflected in the relatively low housing value.

The total capital expenditure allotted to the East Liverpool Campus is $120,000. All these monies are for the purpose of buying land. The only type of impact that one can perhaps expect, therefore, is an income-consumption effect. This would lead to a growth in the GRP of between $283,200 and $392,400.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



CUYAHOGA COUNTY

a) CASE WESTERN RESERVE

b) CLEVELAND STATE UNIVERSITY

c) CUYAHOGA COMMUNITY COLLEGE

Located in the northeast quadrant of Ohio, Cuyahoga County includes within its boundaries the urban center of Cleveland, which is the home of Case Western Reserve, Cleveland State University and Cuyahoga Community College.

With a median family income of $11,309, the county is substantially above the state median income of $9844. However, the percent of all families with income less than the poverty level (as defined by the Census Bureau) is 7.4 percent, which is very close to the state average of 7.9 percent. The mean income of families with female head of family is $6912, while census defined mean income of poor families was $1653. The age distribution of the population is fairly typical, and the median school years completed is 12.1 for both males and females 25 years and older.

The labor force distribution in Cuyahoga County is characterized by a high level of professional, technical and kindred workers (14.97 percent). A further 50 percent of the total labor force is composed of the three groups which include clerical, craftsmen and operatives. The county is noticeably lacking in farm labor and management with less than 1 percent employed in this area.

The statistics for housing in the county indicate that there is an extraordinary amount of existing housing which was built between 1950 and 1959 - 10 percent more than the mean for all other counties in the state. Recent construction has lagged behind the rest of the state as a whole, with only 1.80 percent of the housing stock being constructed in 1969 against a state mean of almost 3 percent. Similarly, housing built between 1965 and 1968 was almost one and one half percent less than the state mean.

A. Case Western Reserve

The capital improvements budget calls for a $750,000 investment to be made on the campus. The direct employment resulting from this expenditure is 19 while indirect and induced employment effects could reach as high as additional 95 persons but not less than an additional 49 persons. The income multiplier effects of the expenditure on the GRP would result in at least $796,500 to a maximum possible $1,103,625. The inter-industry effects translated to a high estimate of $912,260 and a minimum estimate of $470,774.

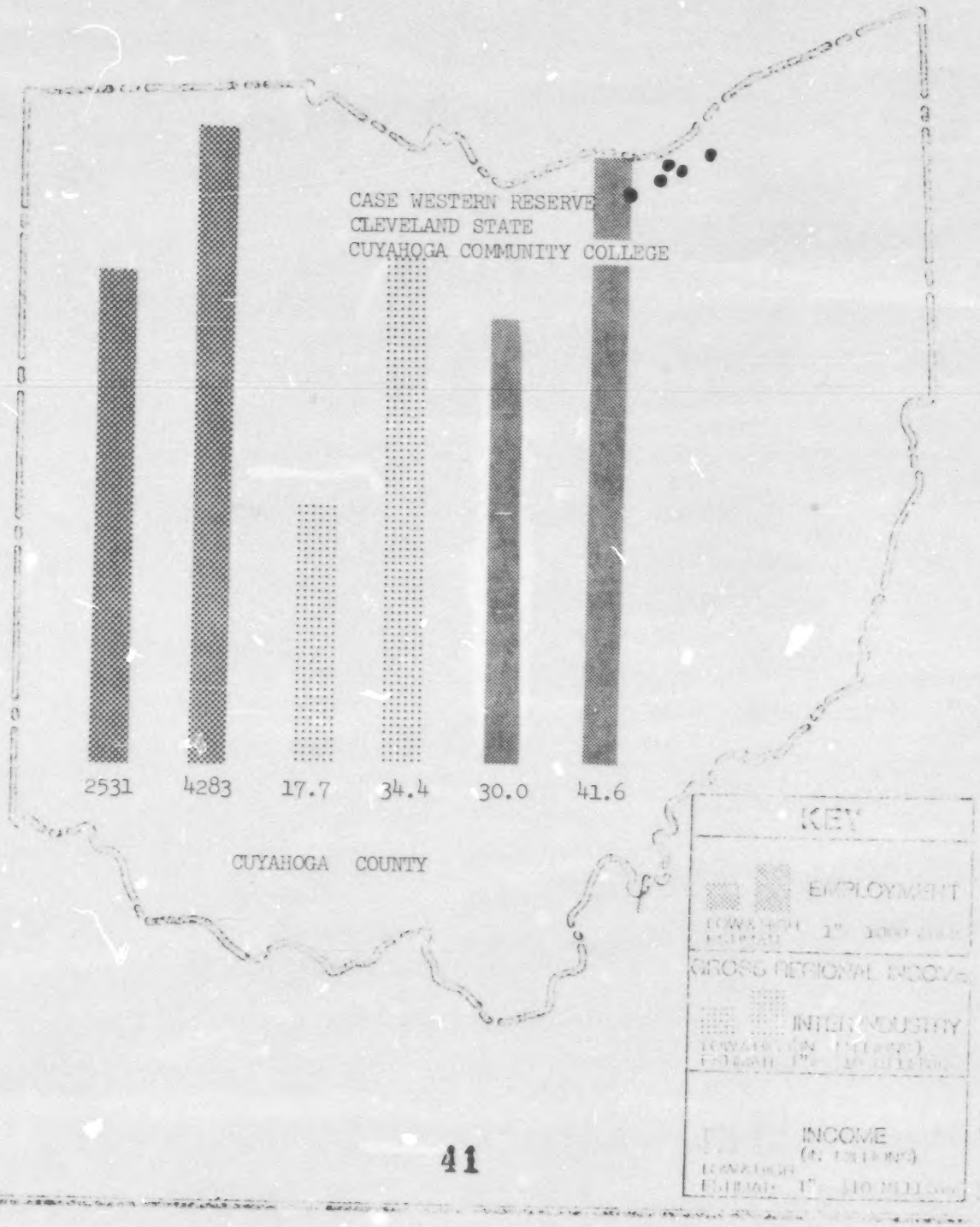
B. Cleveland State University

A capital improvement expenditure of $15,525,000 would directly result in the creation of 389 jobs, and the indirect creation of a maximum of 1962 additional jobs but not less than an additional 1000 jobs. The income multiplier effects of this expenditure would range from a minimum of $16,487,550, to a possible maximum $22,845,038, while the inter-industry effect on the GRP could be within the $9,745,019 to $18,883,787 range.

C. Cuyahoga Community College

The impact of the $12 million expenditure translates into an immediate and direct employment figure of 301 persons, and an indirect and induced employment of a possible 1517 additional persons, but not less than an additional 773 persons. In terms of income multiplier effects, the expenditure will cause a minimum increase in the GRP of $12,744,000 to a possible maximum of $17,658,000. Similarly, the inter-industry multipliers could cause an increase in GRP within a range having a minimum of $7,532,382 and a maximum of $14,596,164.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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FAIRFIELD COUNTY

LANCASTER CAMPUS OF OHIO UNIVERSITY

The Lancaster Campus, a branch of Ohio University, is located in the City of Lancaster in Fairfield County. It is located in the south central part of Ohio. 15

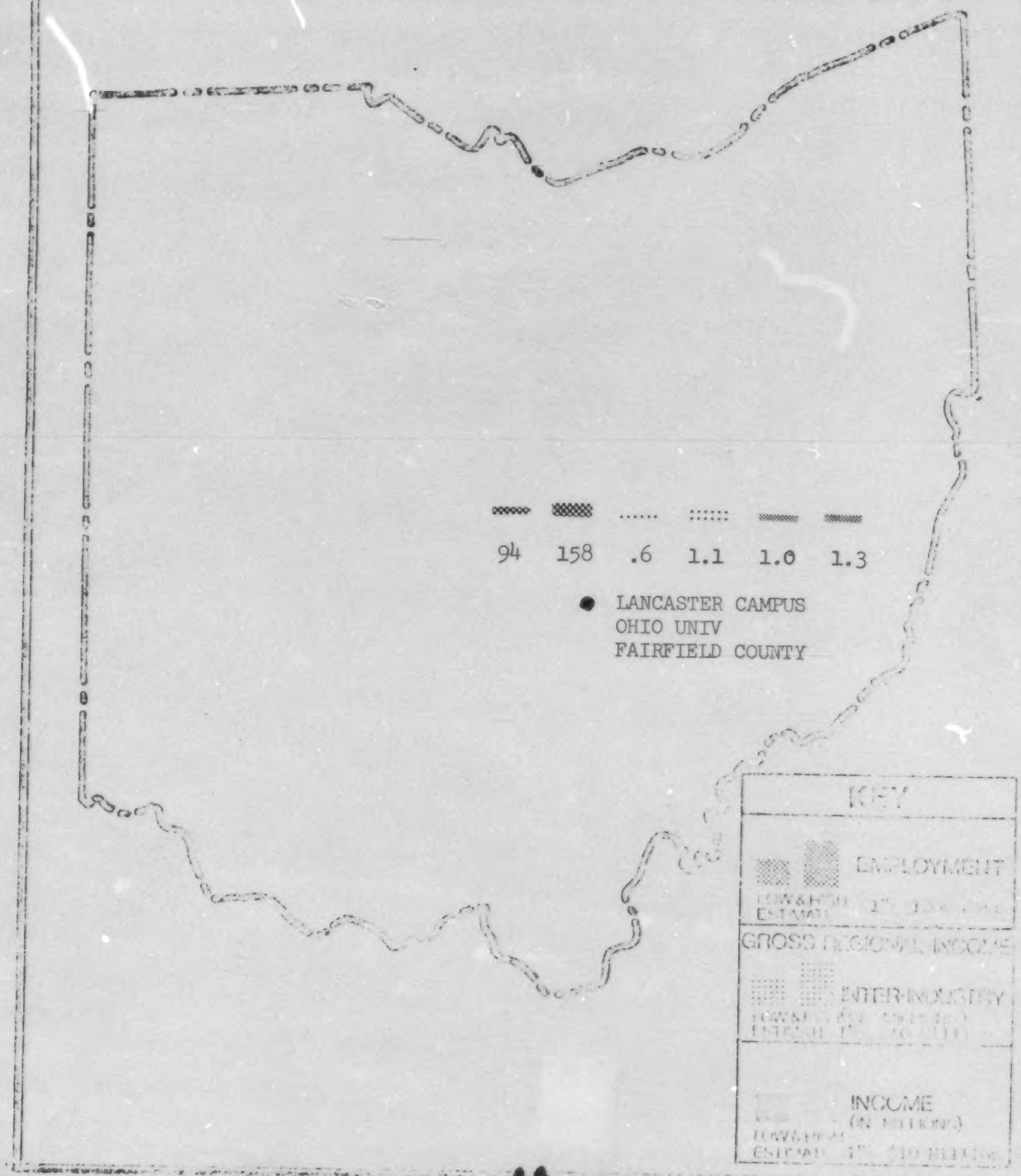
Fairfield County has an age distribution and average educational achievement which is in line with the state averages. Like the statewide statistics, 29 percent of the residents are younger than 15 years of age and 14 percent are older than 60 years of age. Most of the residents are in the working ages of 35 to 59. The median school years completed is slightly above 12, however, the median family income is only $8967, as compared with $9844 statewide. The mean family income is $9718 indicating that there is a significant number of families having incomes much greater than the median.

As with most counties in Ohio, three categories dominate the distribution of labor force: operatives, except transport (19.7 percent), craftsmen, foremen and kindred workers (16.9 percent), and clerical and kindred workers (14.6 percent). 12 percent of the labor force is made up of professional, technical, and kindred workers and 4.6 are non-farm laborers, indicating a varied industrial base.

The housing characteristics data show more 1969 housing starts (3.3 percent) than the statewide average (2.9 percent), although 53.4 percent of the homes were built before 1939, as compared with 49.9 percent statewide.

The capital improvements budget calls for $900,000 in new monies for construction. This means that 30 jobs can be created directly by this investment with between 64 and 128 additional jobs created through the employment effects. The income multipliers would mean that the GRP would grow between $955,800 and $1,324,350. The inter-industry effect will translate into a low estimate of $564,929 and a high estimate of $1,094,712 growth in the Gross Regional Product.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



FRANKLIN COUNTY

a) OHIO STATE UNIVERSITY

b) COLUMBUS TECHNICAL INSTITUTE

Both The Ohio State University and the Columbus Technical Institute are located in the City of Columbus, in Franklin County. Both Columbus and Franklin County are the geographic and political gravity points for the State of Ohio, where the state government makes its home.

The average family income in Franklin County is $12,036 and the median family income $10,582 is far above the average for all counties in the state at $9844. The mean income of families with a female head in Franklin County is $6360 while the mean income of poverty stricken families is $1892. There is a lower proportion of poor people than the state average (7.6 percent in Franklin versus 7.9 percent for the state).

This can be explained by the age and occupational structure of its population. Franklin County is the fastest growing county in northern U.S. Consequently, it has an above average young population. In fact, about 50 percent of its population is in the prime earning years of 21-60. In the above 60 years and below 14 years of age the county has lower proportions of population than other counties in Ohio. At the same time, the population is better educated than elsewhere. 60.6 percent of males and 61.5 percent of females are high school graduates. The median of school years completed is 12.4 for males and 12.3 for females.

All this reflects the structure of the industrial base of the county. The largest segment of the county's labor force is in the category clerical and kindred workers (22.06 percent), followed by professional, technical and kindred workers (18.14 percent). The principal reason for such predominance of white collar workers is the fact that the county serves as the seat of the Ohio government and houses the largest college campus in the state.

In addition, Franklin County has a large number of craftsmen, foremen, and service workers (10.69 percent), and kindred workers (11.95 percent). The proportions of the less skilled and less paid workers in the county are relatively low: farm laborers (.22 percent), private household workers (1.03 percent), and even transport equipment operatives (3.57 percent). It is, thus, not at all surprising that the county is relatively affluent.

The housing stock if the county is fairly typical of this size county. The majority of houses were constructed after 1950. Although the above does not indicate a slump in the construction industry, it has suffered here along with the rest of the country.

A. Ohio State University

The proposed capital expenditures budget calls for a total $25,050,000 to be spent on the Ohio State Campus. The total effects of these expenditures on the Gross Regional Product are:

a. The creation of 823 new construction jobs

b. The inter-industry multipliers would increase the GRP by an estimated $15,723,847 to $30,469,492

c. The income effect upon the GRP would range anywhere from $26,603,100 to $36,861,075.

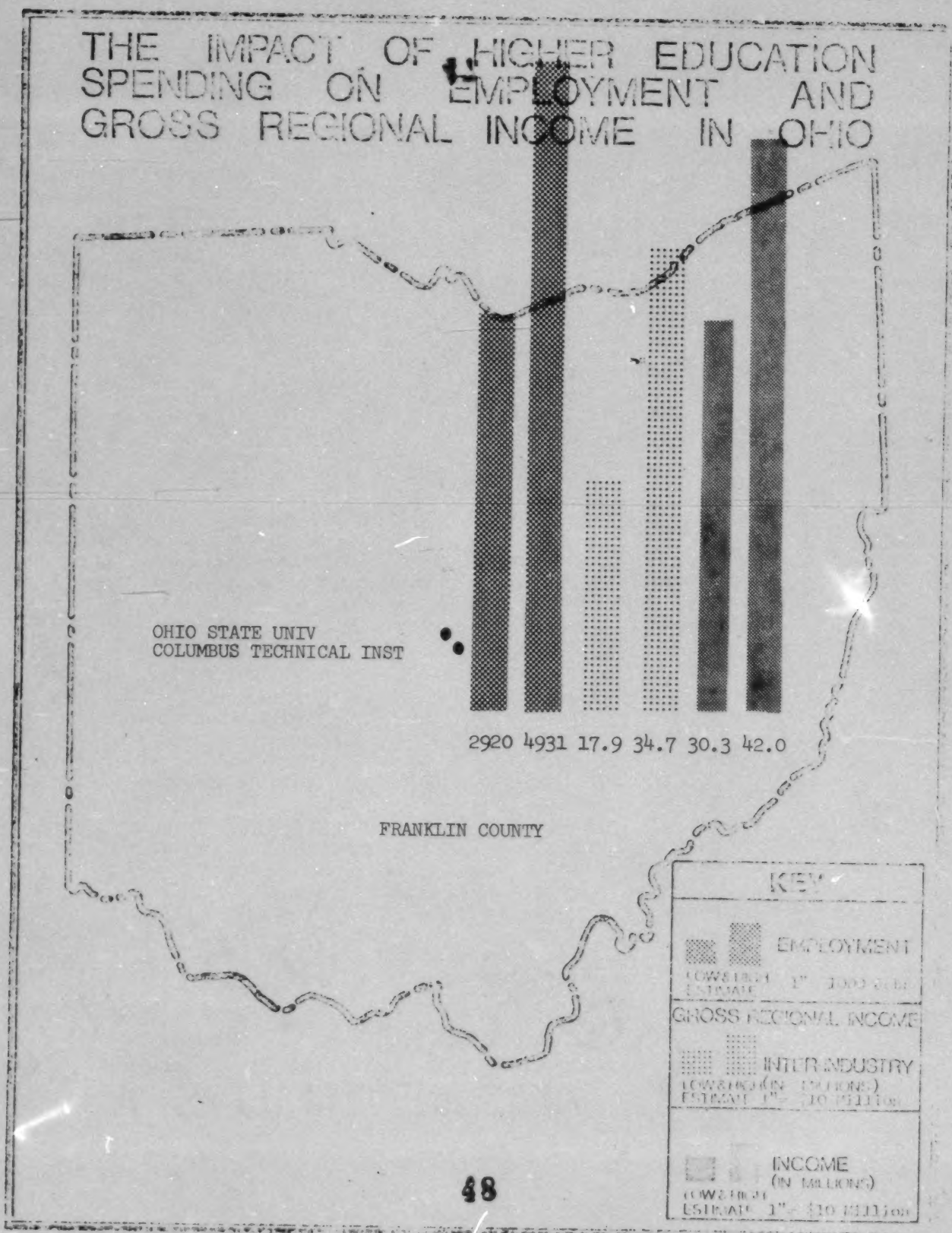
Indirect and induced effects upon Franklin County's labor market would range from 1742 to 3507 additional jobs.

B. Columbus Technical Institute

The proposed budget for Columbus Technical totals $3,475,000 in capital expenditures.

The direct effect of the expenditure in the first period would be the creation of 114 construction jobs. The inter-industry multiplier would enhance the GRP by an estimated $2,181,252 to $4,226,806. The income effect of this expenditure upon the GRP would range from a low of $3,690,450 to a high of $5,113,462. The labor market would be benefited by the indirect creation of an additional 241 to 487 new jobs.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



GALLIA[illegible]UNTY

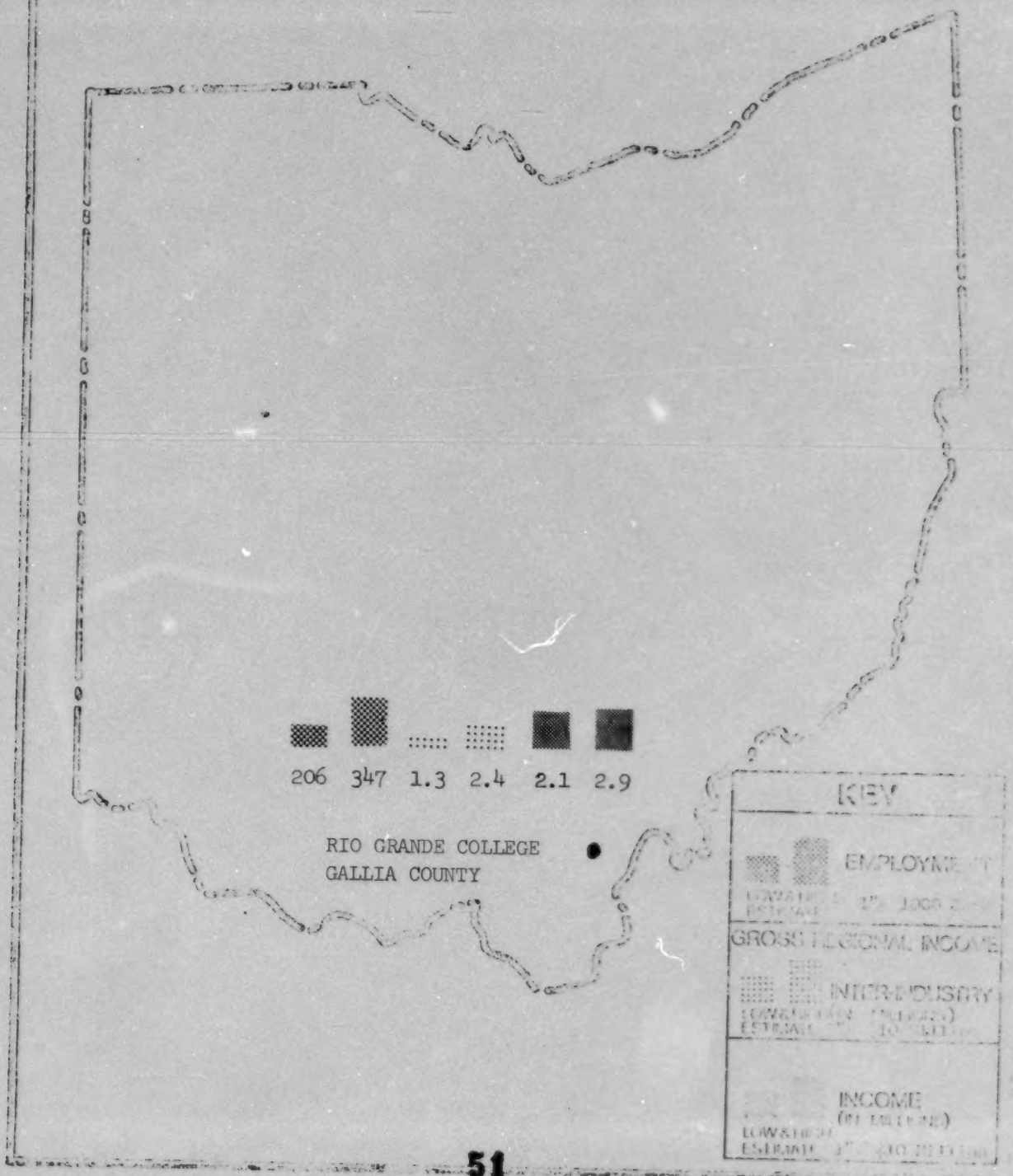
RIO GRANDE COLLEGE

Rio Grande College is located in the southeastern part of Ohio in Gallia County in the City of Rio Grande. Gallia County is a relatively poor county with a median income of $6915 which is 30 percent lower than the average for the state. Families with a female head earn a mean income of $4091, and 19.1 percent of the families have incomes below the poverty level, this last figure is nearly 3 times the average for the state. The mean family income of familes below the poverty level is $1919. The disadvantaged nature of this county is further evidenced by the fact that little more than a third of those over age twenty-five have a high school education, with median school years attended being 9.6.

Using the age distribution of the housing stock as an index of the health of the construction industry, we note that 21 percent of the housing stock has been built in the last fifteen years, with 3.5 percent in the last 6 years which is slightly above average. 57.93 percent of the housing stock is older than 35 years which is above average. With nearly 20 percent of the labor force being craftsmen, foremen and laborers it would seem that the construction industry would have a fairly large labor force to draw upon.

The proposed capital expenditures budget calls for $2,000,000 to be spent during the coming biennium which will result in 66 new construction jobs during this period. The indirect employment effects will create between 140 and 281 additional jobs. The Gross Regional Product will grow due to income effects by a maximum of $2,124,000 and $2,943,000 with inter-industry effects amounting to $1,255,397 and $2,432,694.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



GREENE COUNTY

3

a) CENTRAL STATE UNIVERSITY

b) WRIGHT STATE UNIVERSITY

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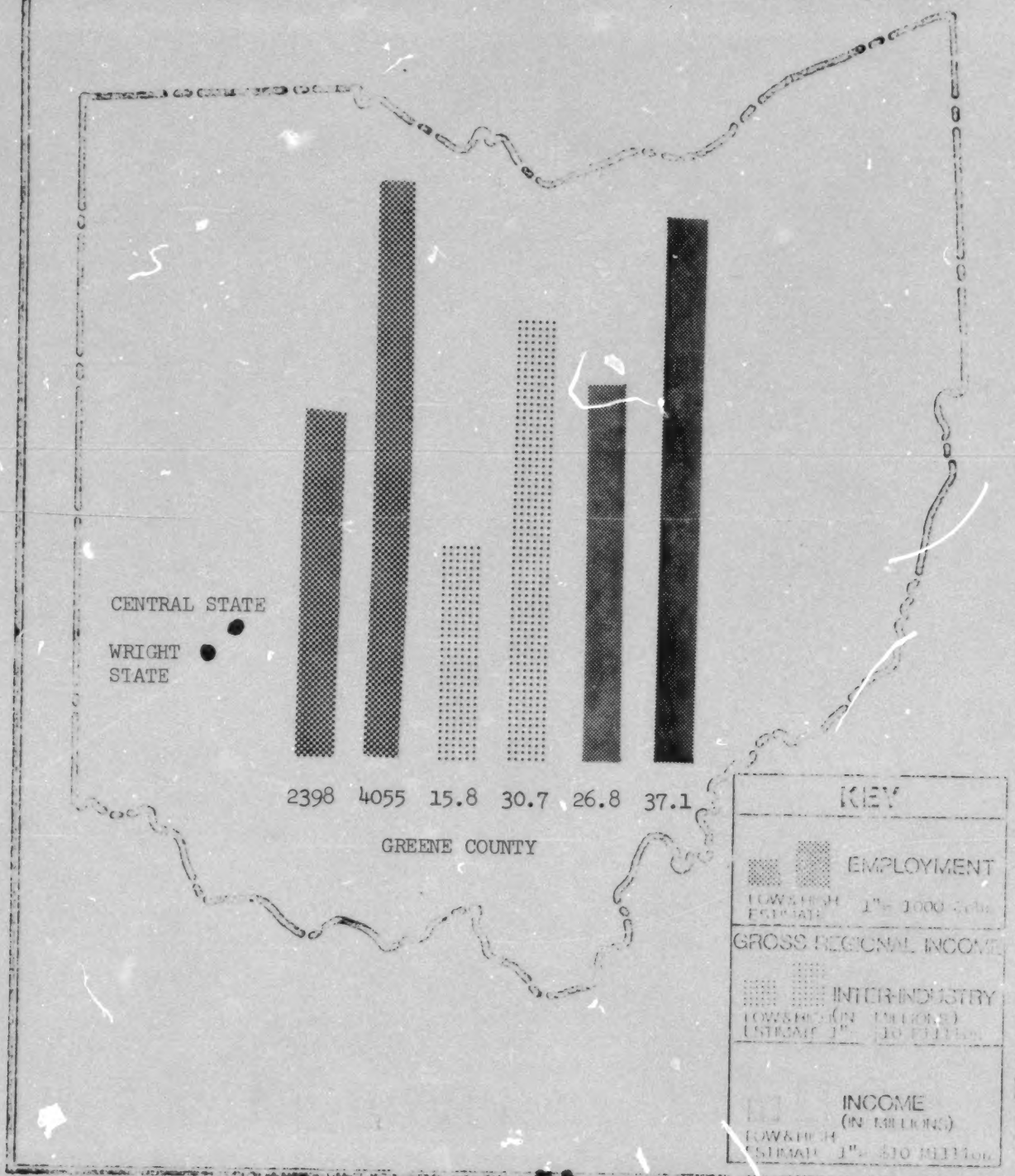
Located in West Central Ohio, Greene County contains both Wright State University and Central State University. Median family income in Greene County is $11,694 which is above average. The mean income of families with female heads is $6534 5.2 percent of all families had income below the poverty level. The average for the state is 7.9 percent. The relative affluence of this county is reflected in the educational levels of those over the age of twenty-five where 61.8 percent had graduated from high school and the median school years attained is 12.4 years. Nearly 25 percent of the labor force is occupied as professional, technical, managers and administrators. Nearly 20 percent of the labor force is occupied as craftsmen, foremen and laborers, reflecting a sufficient labor force for the construction industry to draw upon. Our index of the health of the construction industry is the age distribution of the housing stock, we note that over 30 percent of the housing stock was built in the last 15 years, while the average for the state is approximately 20 percent. Only 25.14 percent of the housing stock is older than 35 years as compared to 50 percent for the state.

The proposed capital expenditure of $8,025,000 for Central State University will have the direct effect on the labor market of creating 228 new jobs. The Gross Regional Product will increase by a maximum of $11,808,788 and a minimum of $8,522,550 due to income effects. The indirect employment effects will amount to an increase of between 534 and 1061 additional new jobs, and the inter-industry effects will amount to a high estimate of $9,761,185 and a low of $5,037,280.

The capital improvement program for Wright State University which is reflected in the budget calls for expenditure of $17,225,000. Direct employment will be 489 persons, while the indirect employment effects would yield minimum and maximum potentials of 1636 to 2766 persons. As a result of the capital improvement program, the income multipliers would add to the GRP levels between $18,292,950 and $25,346,588. Similarly, inter-industry effects would contribute to GRP from $10,812,107 to $20,951,577.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



HAMILTON COUNTY

a) UNIVERSITY OF CINCINNATI

b) CINCINNATI TECHNICAL COLLEGE

The University of Cincinnati is located in Hamilton County in the southwestern tip of the state.

The county compares favorably with the average of the other counties included in this report in terms of financial characteristics of the residents. The median family income is $10,486, whereas the average for the 35 county sample is $9844. The mean income of all families with females as head is listed as $6465. The mean family income of families earning less than the poverty level is $1921, and 8.3 percent of the county's families fall into this category. This compares unfavorably with the other counties sampled, as the average of below poverty families in the entire sample was 7.9 percent. Thus, it is presumed that the distribution of income in this county is rather skewed.

The major categories of the labor force include clerical workers (19.54 percent), professional workers (16.86 percent), craftsmen and foremen (12.00 percent), operatives, except transport (13.62 percent), and service workers except private household (11.53 percent). The statistics seem to indicate that the distribution of labor in the county leans toward the while collar and service industries.

In terms of employment, the Cincinnati metropolitan area enjoyed an increase in total employment of 1.3 percent. However, the area experienced a decrease of 6.4 percent in November in the construction industry, and an overall decrease of 1.1 percent over 1974.

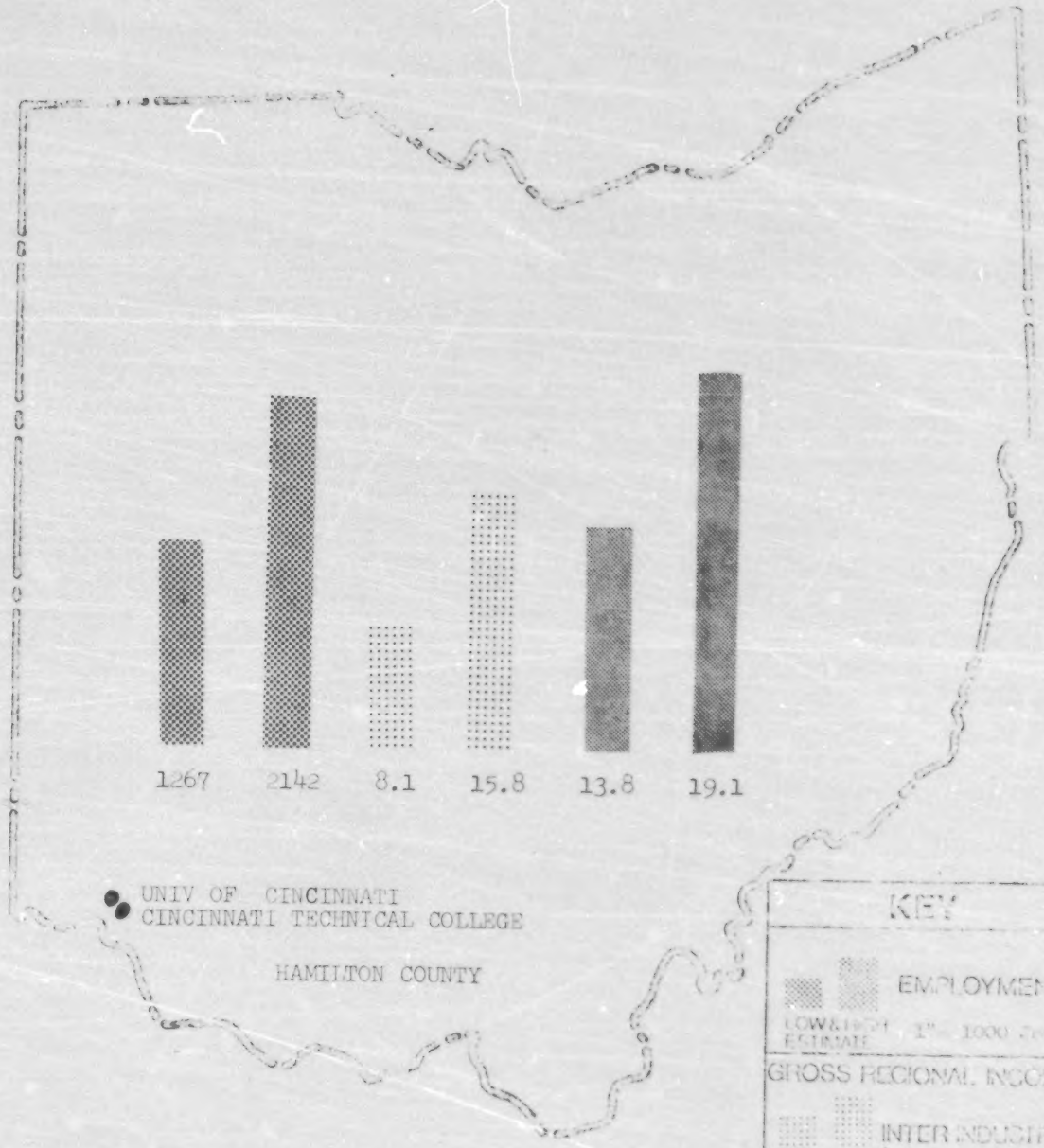
While overall housing starts compare favorably with statewide results, statistics indicate that in the latest data available the Cincinnati region ranked below the average of the county sample. When this fact is shared with the previously disclosed statistic of a decrease in construction employment, it leads to the conclusion that the construction industry is quite possibly heading into a serious slump.

The capital expenditures budget of $8,500,000 for the University of Cincinnati can be expected to bring about directly an increase of 254 construction jobs. Inter-industry multipliers can be expected to bring about an increase in the Gross Regional Product ranging from a low of $5,335,437 to a high of $10,328,950. Income effects would lead to an increase of the GRP between $9,027,000 and $12,507,750. Indirect effects of the proposed expenditure on employment in the area include estimates of a low of 575 additional jobs to a high of 1147 additional jobs.

The capital expenditures budget calls for a total of $4,500,000 to be spent on Cincinnati Technical College.

The proposed expenditure would result directly in the creation of 134 construction jobs. The action of inter-industry multipliers would increase the Gross Regional Product by a minimum of $2,824,643 or a maximum of $5,473,562. The income effects during the period would produce an increase of anywhere from $4,779,000 to $6,621,750. Indirect effects on the employment market would result in an additional 304 to 607 jobs being created.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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HENRY COUNTY

NORTHWEST TECHNICAL COLLEGE

Located in Ridgeville Corners in Henry County, the Northwest Technical College serves primarily the northwest Ohio area.

The median family income of the county is $9994 which indicates that it is a more affluent county than most counties in Ohio. The mean family income is $10,544 and for families with female heads the mean income was $7251. Relatively few families are at an income less than poverty level with the exact proportion being 6.5 percent. The mean family income of these poverty level families is $1897.

There is a surprising lack of professional workers in Henry County considering the respectable incomes generated. The largest occupational sectors are clerical, craftsmen, and foremen, and operatives excluding transport, commanding 12.33 percent and 19.68 percent respectively. Professional and managerial constitute jointly over 16 percent of the labor force. Farmers have a somewhat high 7.05 percent portion of the labor force.

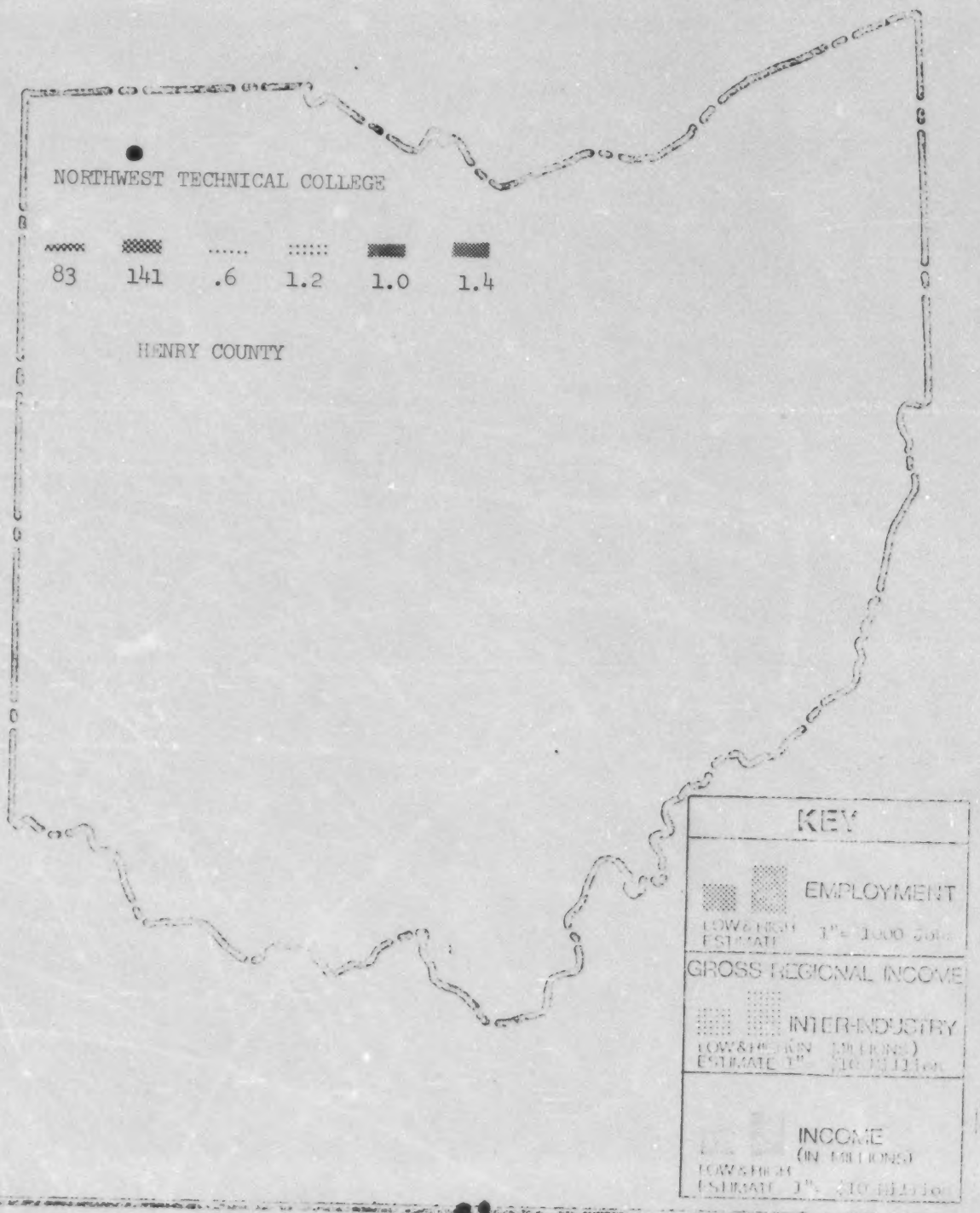
When compared to the rest of the state, Henry County is lacking in housing constructed after 1939. This lack is compensated by older housing with 66.92 percent of all housing units constructed prior to 1940 as compared with the state average of 49.93 percent. However, this old housing has a median dollar value of $14,600, indicating that substantial quality has been maintained.

Education levels are slightly higher in Henry County than usual for the state. 50.1 percent of the males and 55.8 percent of the females have graduated from high school. The median school years completed are 12 for males and 12.1 for females.

Age distributions for this county indicate that there are slightly more elderly and young; and slightly less middle aged than normal for the state.

Of the $1,025,000 in capital improvement funds for Northwest Technical College $950,000 are for uses other than land acquisition. This will directly create 23 construction jobs and may, due to multipliers, generate anywhere from 60 to 118 additional jobs. Income realized by these workers will amount to $1,008,900 as a minimum and as much as $1,397,925. The inter-industry benefits will be $596,314 as a minimum and may extend up to $1,155,530.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



JEFFERSON COUNTY

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JEFFERSON TECHNICAL COLLEGE

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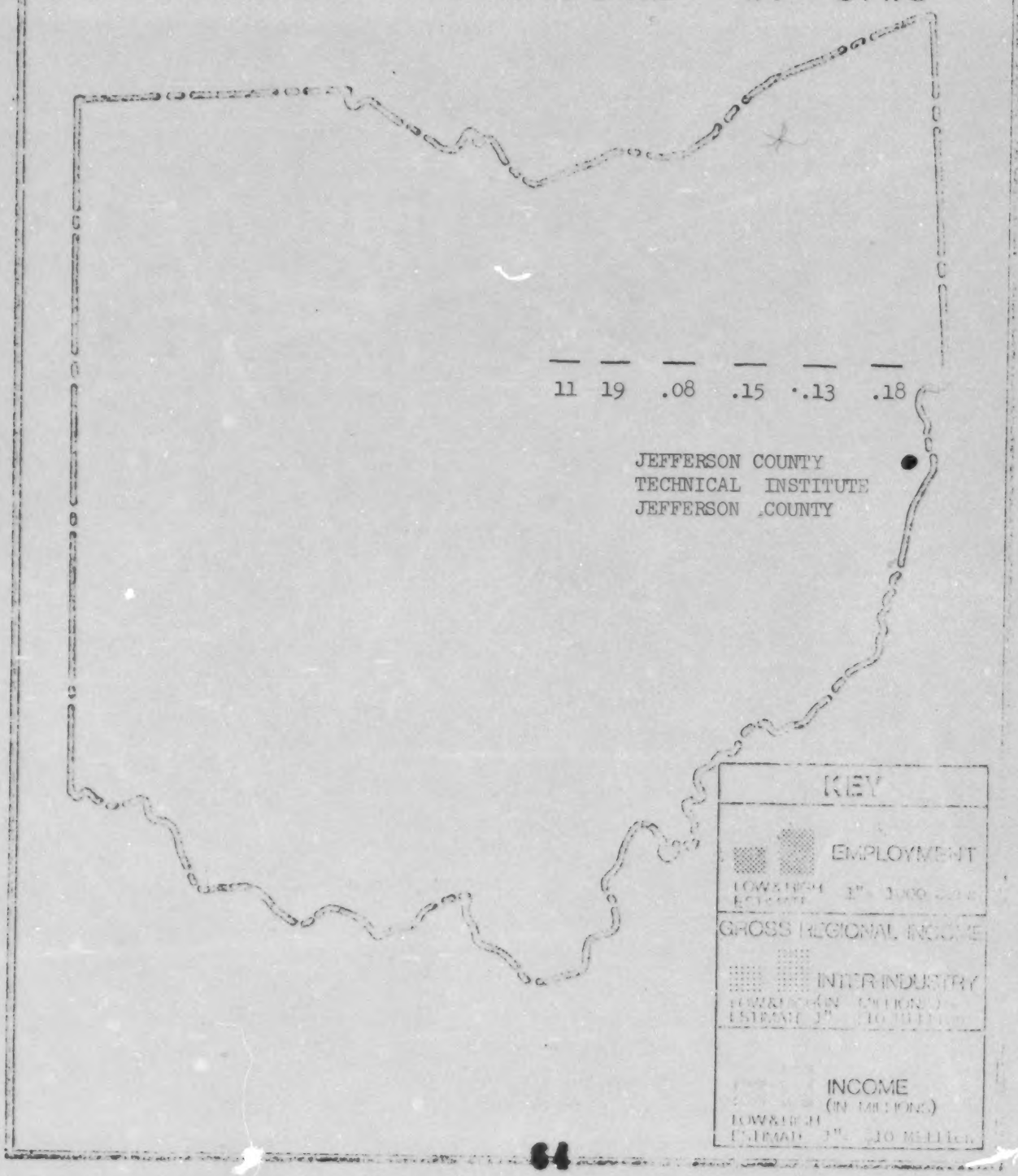
Jefferson Technical College is located in Steubenville in the northeastern part of the state.

In terms of income characteristics the county ranks somewhat below the avearge of the other counties included in this report. The median family income of Jefferson County was $9347 as compared with a sample average of $9844. The mean income of families with a female head was $6445. Poverty statistics for the county suggest once again that the county ranks below the average recorded by the 35 county sample. The mean income of families below poverty level was $1771, with 8.5 percent of the county's families falling into the poverty classification. This compares to an average of 7.9 percent for all counties.

The county's labor force is dominated by craftsmen and foremen (20.91 percent), operatives, except transport (15.13 percent), and clerical workers (14.33 percent). Steubenville is primarily a blue collar community, as figures show that only 10% of the labor force is of a professional nature. The region in which the county lies experienced some severe unemployment problems, as statistics indicate that employment dropped 1.4 percent over the 1974 calendar year and 1.6 percent during the month of December 1974 alone. More important, the construction industry suffered a drop of 6.2 percent in employment during the 1974 period. To make matters worse, housing starts for the county have been considerably below the average for the state.

The capital expenditures budget calls for $125,000 to be spent in the county. This would result directly in 3 new construction jobs being created. Inter-industry effects of this expenditure would be between $78,462 and $152,043. The income multiplier would produce an increase in the GRP ranging from $132,750 to $183,938. The indirect effect of the expenditure on the labor market would be an increase of from 8 to 16 additional jobs.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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LAKE COUNTY

LAKELAND COMMUNITY COLLEGE

Lakeland Community College is situated in the northeast corner of Ohio on the Lake Erie shore. Because it is so close to the Cleveland metropolis, its population displays a higher income character, the county median being $11,964. The mean for all families in the county is $12,900 while that of families with female heads is $8,314. There are, however, 8.4 percent of the families in Lake County living below poverty level, with their mean income at $1715. This figure must be viewed in light of the state's proportion of poor population of 7.9 percent.

There is a great number of professional workers in the Lake County area. Professional, technical, managers and administrators make up 20.53 percent of the total labor force. The remainder is primarily distributed between five groups, operatives with 19.67 percent of the labor force, and foremen with 18.31 percent, clerical making up 17.29 percent service workers constituting 8.92 percent, and sales workers making up 7.08 percent of the total labor force.

Lake County has recently experienced a great deal of growth. Nearly 4 percent of its present housing stock was built in 1969 while in the 1965-1968 period, 10.23 percent was built. In the 1960-1964 period 16.99 percent of Lake County structures were built, as compared to the state mean of 9.89 percent. In the years prior to 1940, 23.17 percent of the present housing structure was constructed as opposed to 49.93 percent for the state as a whole. The median dollar value for this county's housing units is a relatively high 22,200.

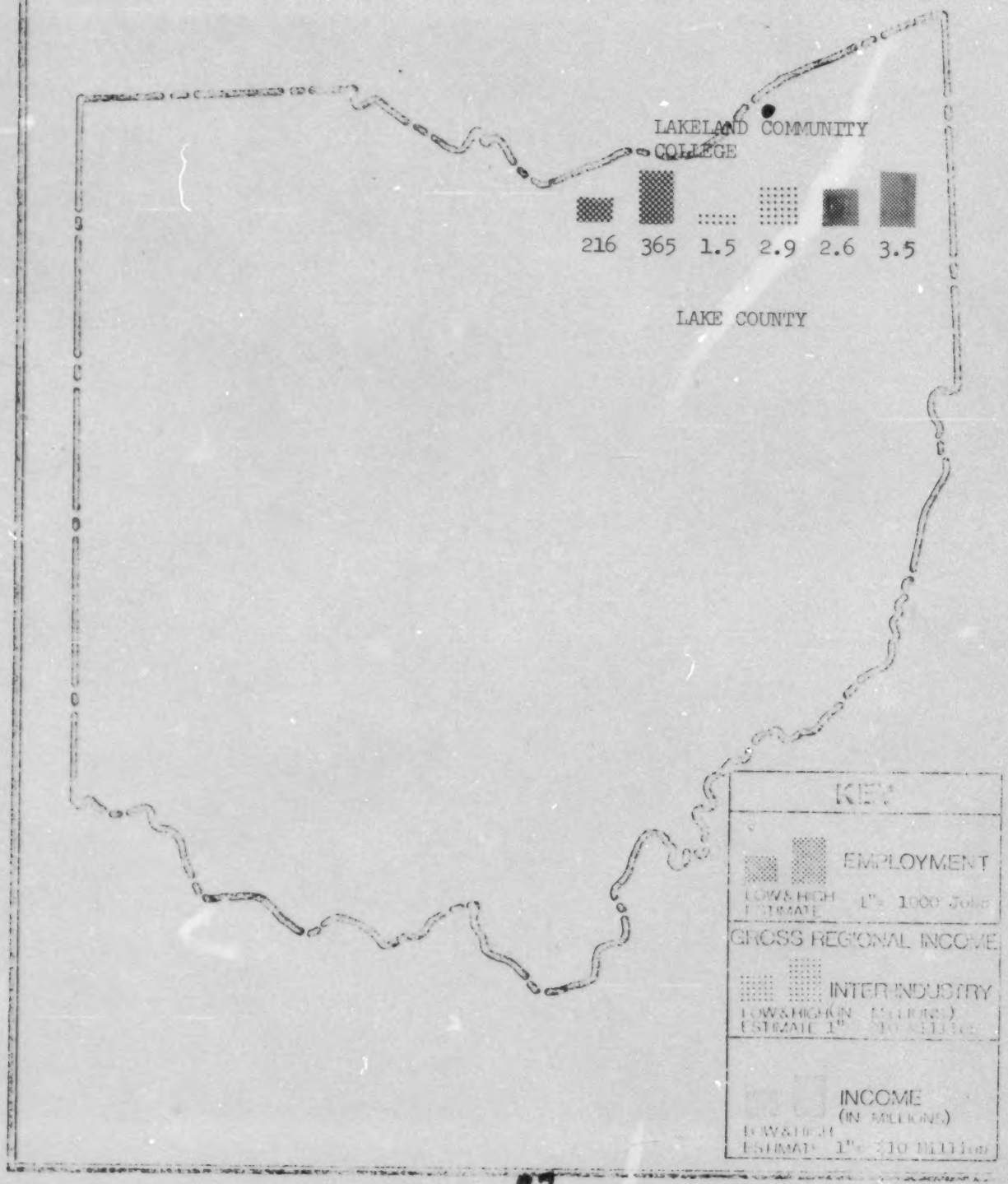
The education level is relatively high also, 58.6 percent of the adult males and 61.9 percent of females have graduated from high school. The median school years completed are 12.2 for males and 12.3 for females, so it becomes evident that this is a well educated county when one considers what is typical.

Lake County is young with 32.77 percent of its residents under 14 years. The middle age groups have proportions approximately the same as the state as a whole, but in the 60 years and older group Lake County contains only 8.58 percent of its citizens as opposed to the state average of 13.27.

The capital expenditures of $2,411,000 for the Lakeland Community College will directly create 60 new jobs and when one considers the multiplier effects, there will be 156 to 305 jobs indirectly generated by these monies.

The income from these expenditures will range from $2,560,482 to $3,547,787 while the inter-industry effect will range from $1,513,381 to $2,932,613.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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LICKING COUNTY

NEWARK BRANCH OF

OHIO STATE UNIVERSITY

AND THE

CENTRAL OHIO TECHNICAL COLLEGE

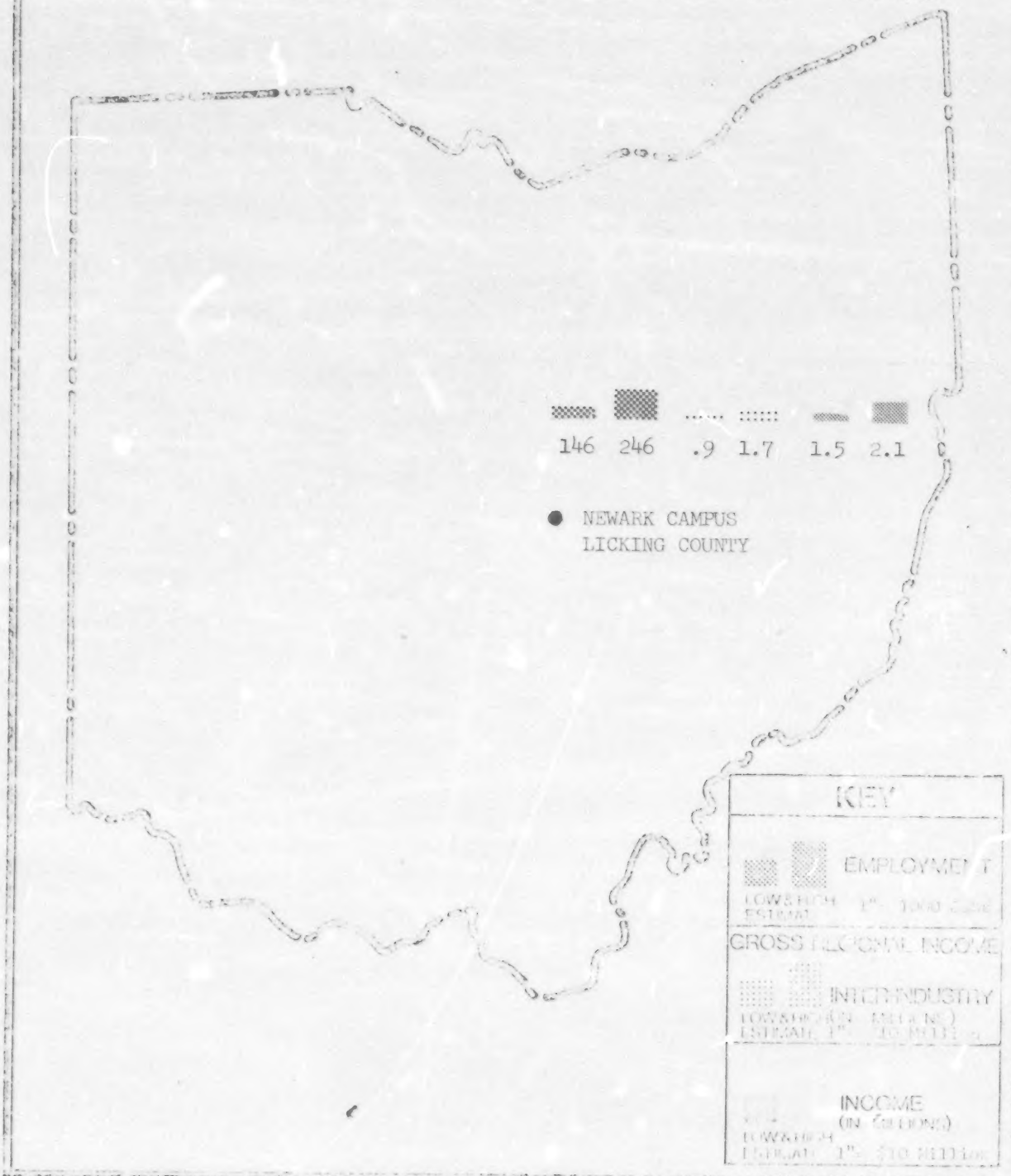
The Newark Campus is located in Licking County approximately 30 miles east of Columbus.

The county ranks below average in terms of income characteristics. The median family income of the county was $9305, as compared with a median income of $9844 for the 35 counties sampled. The mean income of families less than poverty level was $1916, and 8.4 percent of the county's families were included in the poverty category. This compares with a statewide average of 7.9 percent.

Operatives except transport (18.48 percent), craftsmen except foremen (16.39 percent), clerical workers (15.65 percent), and professional workers (13.54 percent) dominate the county's labor force. The Columbus region, of which Licking County is a part, experienced an increase of .5 percent in employment during 1974. There was no change in construction employment during the year. However, figures for December 1974 show a drop of 8.6 percent in construction employment, indicating a seasonal slump for the industry.

The capital expenditures budget of $1,425,000 to the Newark Campus, will result directly in the creation of 47 construction jobs. The interindustry effects on the Gross Regional Product would range from a low of $894,470 to a high of $1,733,294. The income multiplier would have a positive effect on the GRP of anywhere from $1,513,350 to $2,096,888. The labor market in the county would be bolstered by the creation of from 99 to 199 additional jobs by means of the employment multiplier.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



LORAIN COUNTY

55

LORAIN COMMUNITY COLLEGE

Lorain Community College is located in Elyria just west of Cleveland.

The county ranks above the average of the counties sampled in terms of income characteristics. The median family income for the county was $10,081, considerably above the $9844 median family income recorded statewide. The mean income of families with a female head was $6657. Approximately 5.7 percent of the county's families fell into a poverty income classification, with the mean income of this group of families being $1804. On a statewide basis, an average of 7.9 percent of all families earned less than a non-poverty level of income.

The county's labor force is composed mainly of operatives except transport (20.85 percent), craftsmen and foremen (18.01 percent), clerical workers (14.65 percent), professional workers (12.33 percent), and service workers except household (11.06 percent). Employment in the Cleveland region dropped .5 percent overall during 1974. The construction industry experienced a decline of 1.0 percent in employment during the year, with a seasonal slump of 5.6 percent in December.

The county's housing stock is above the statewide average, as 3.39 percent of the county's housing starts came in the latest year on which data was available (1970), as compared to a statewide average of 2.98 percent. This lends continued credibility to the fact that Lorain County is financially superior to the average of the counties included in this report.

The capital expenditures budget calls for $300,000 to be spent in the county. This proposed expenditure would have a direct effect of creating 8 new construction jobs. The inter-industry effect would increase the Gross Regional Product by a range of $188,310 to $364,904. The income multiplier would produce a positive effect on the GRP ranging from a low of $318,600 to a high of $441,450. The indirect impact on the county's labor force would be anywhere from 20 to 40 new jobs being created.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO

12

LUCAS COUNTY

a) UNIVERSITY OF TOLEDO

b) MEDICAL COLLEGE OF OHIO AT TOLEDO

74

Lucas County is located in the northwest sector of the state on the border of the Michigan-Ohio line.

The county ranks somewhat above the statewide average in financial considerations. The median family income of the county was $10,823 as compared to the statewide average of $9844. The mean income of families with a female head was $6830. The mean income of families earning incomes less than poverty level was $1852, with 7.0 percent of the county's families falling into this category. This compares to a statewide poverty level of families of 7.9 percent.

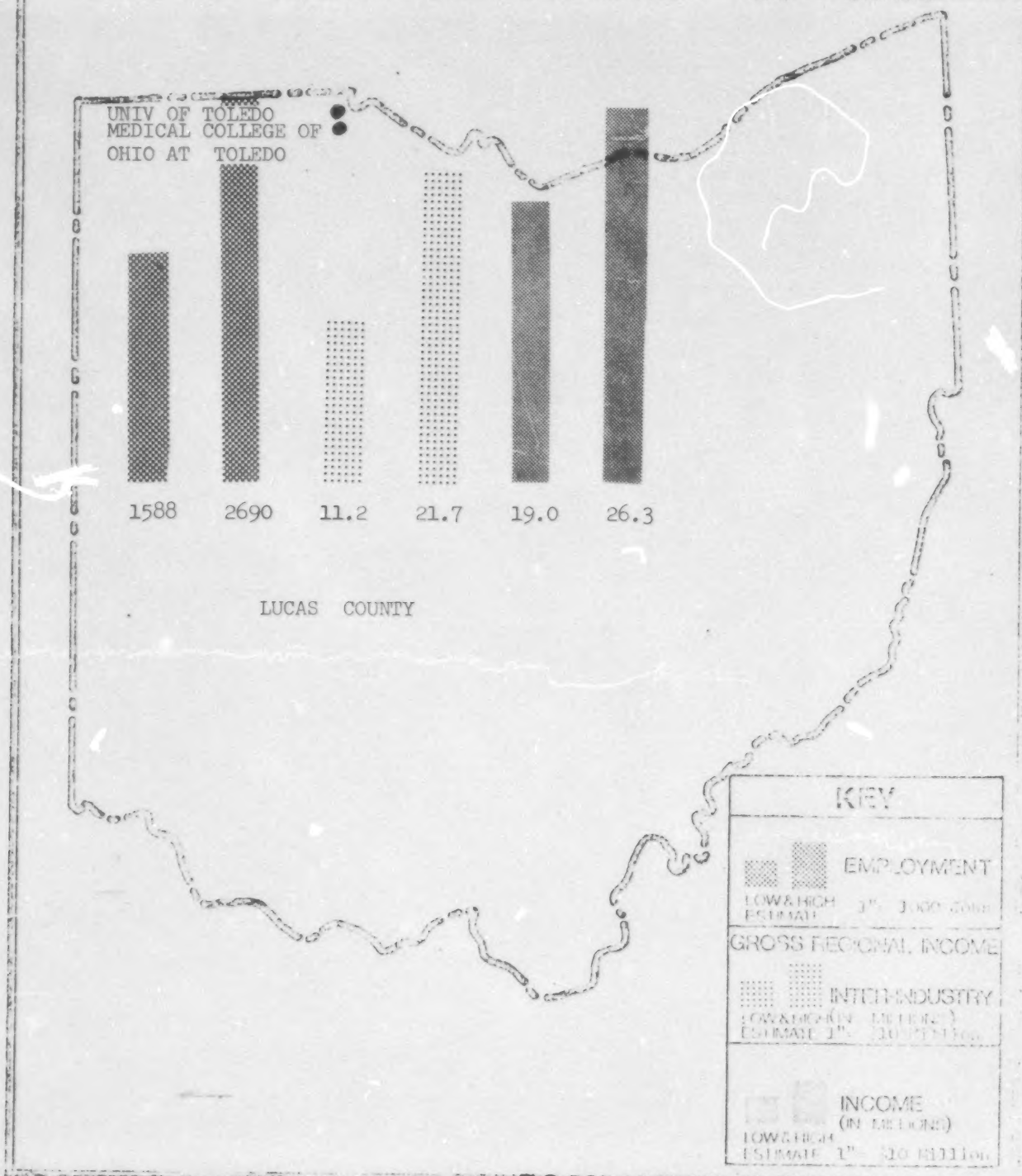
The age distribution of the county compares quite favorably with the averages recorded statewide. The labor force of the county exhibits a distribution similar to other counties in the sample, as clerical workers (18.10 percent), operatives except transport (15.49 percent), craftsmen and foremen (14.76 percent), professional workers (14.18 percent), and service workers (12.03 percent), tend to dominate the overall occupation distribution.

The Toledo area experienced a decrease of .9 percent in unemployment over the 1974 calendar year. An interesting note is that employment in the construction industry increased by 4.9 percent, even with a seasonal decline of 6.1 percent in December. As housing characteristics and new housing starts compare favorably with statewide figures, it is not necessary to expand upon that area at this time.

The capital expenditures budget proposes that $10,375,000 be allocated to the University of Toledo. This expenditure would have a direct effect of creating 256 new jobs in the construction industry. The inter-industry multiplier would produce an effect that would increase the Gross Regional Product by an estimated range of $6,512,372 to $12,619,600. The income effects of this expenditure would range from an increase of $11,018,250 to $15,266,813 in the GRP. The indirect effect upon the labor market would be the creation of an additional 666 to 1305 jobs.

The Medical College of Ohio at Toledo is also located in Lucas County. The proposed capital expenditure for this institution amounts to $7,500,000. The direct effect of this action would be the creation of 185 new construction jobs. Inter-industry effects would include a positive change in the Gross Regional Product ranging from $4,707,739 to $9,122,603. The GRP would also be stimulated by the effects of the income multiplier which can be expected to bolster the GRP from $7,965,000 to $11,036,250. The indirect effect upon the county's labor market would be the creation of 481 to 944 new jobs.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



MAHONING COUNTY

YOUNGSTOWN STATE UNIVERSITY

Mahoning County is located on the east border of Ohio, near Interstate 80. The median income for Mahoning families is $10,096 and a mean income of $11,160. For families with a female head the mean income is $6498. Poverty level incomes are less prevalent in this county than most, with a 7.4 percent sector of their families earning less than that amount. The mean income of these poverty level families is $1753.

There are 12.02 percent of the families in professional and technical trades and 24.67 percent of the labor force is either managerial or clerical. Nearly half of the labor force is either clerical, craftsmen and foremen, or operative other than transport, with 16.06 percent, 16.83 percent and 16.57 percent of the labor force respectively. The rest of the labor force is distributed nearly consistently with the rest of the state except for a conspicuous lack of farm related workers with less than 1 percent being involved in these activities.

23.44 percent of the housing in Mahoning County was built between 1950 and 1959, varying substantially from the mean of 19.52 for all other counties. New housing is a little less frequent than usual with 1.88 percent of the structures built in 1969 compared to an average of 2.98 percent for all the other counties in the state. The values of the structures have a median of $15,900 which is not particularly unusual for this state.

The age distribution for Mahoning shows few special characteristics. Generally, it is consistent with that of the rest of the state.

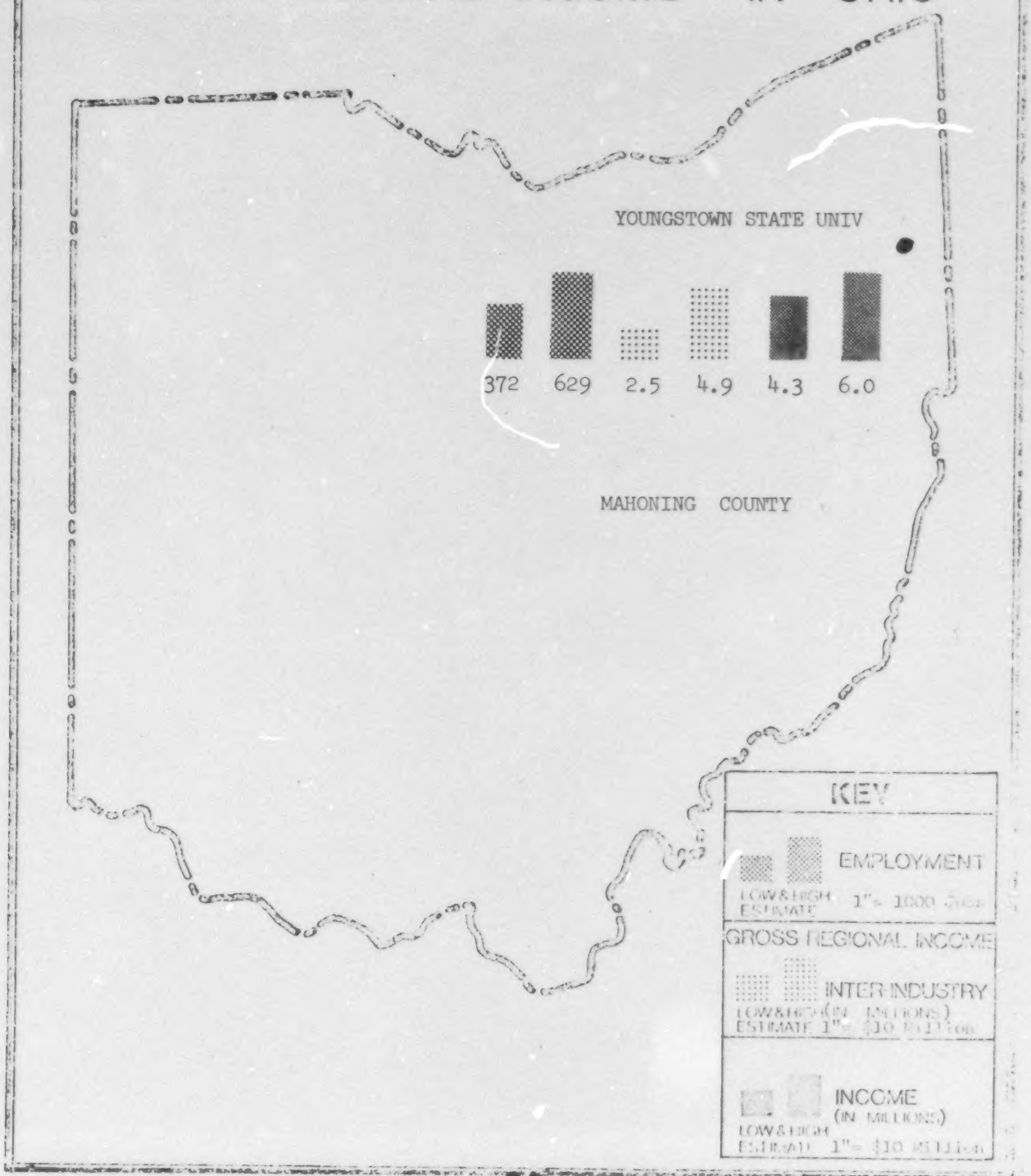
Under half (49.6 percent) of the males have graduated from high school in Mahoning County while 52.5 percent of all females over 25 have. The median years completed for males and females is 11.9 and 12.1 respectively.

The Capital Budget recommends $4,050,000 for Youngstown State University in the 1975-77 biennium. The number of jobs that will be realized directly is 107 with indirect consequences of at least 263 jobs and perhaps as many as 522 additional jobs.

The income generated by these grants with the multiplier effects amounts to at least $4,301,100 and as much as $5,959,575.

Inter-industry effects will be from $2,542,179 to $4,926,205.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



MERCER COUNTY

81

WESTERN OHIO CAMPUS

(WRIGHT STATE UNIVERSITY)

- 80

The Western Ohio Campus of Wright State University is located in Celina in Mercer County. The county is situated in the western part of the state approximately 60 miles north of Dayton.

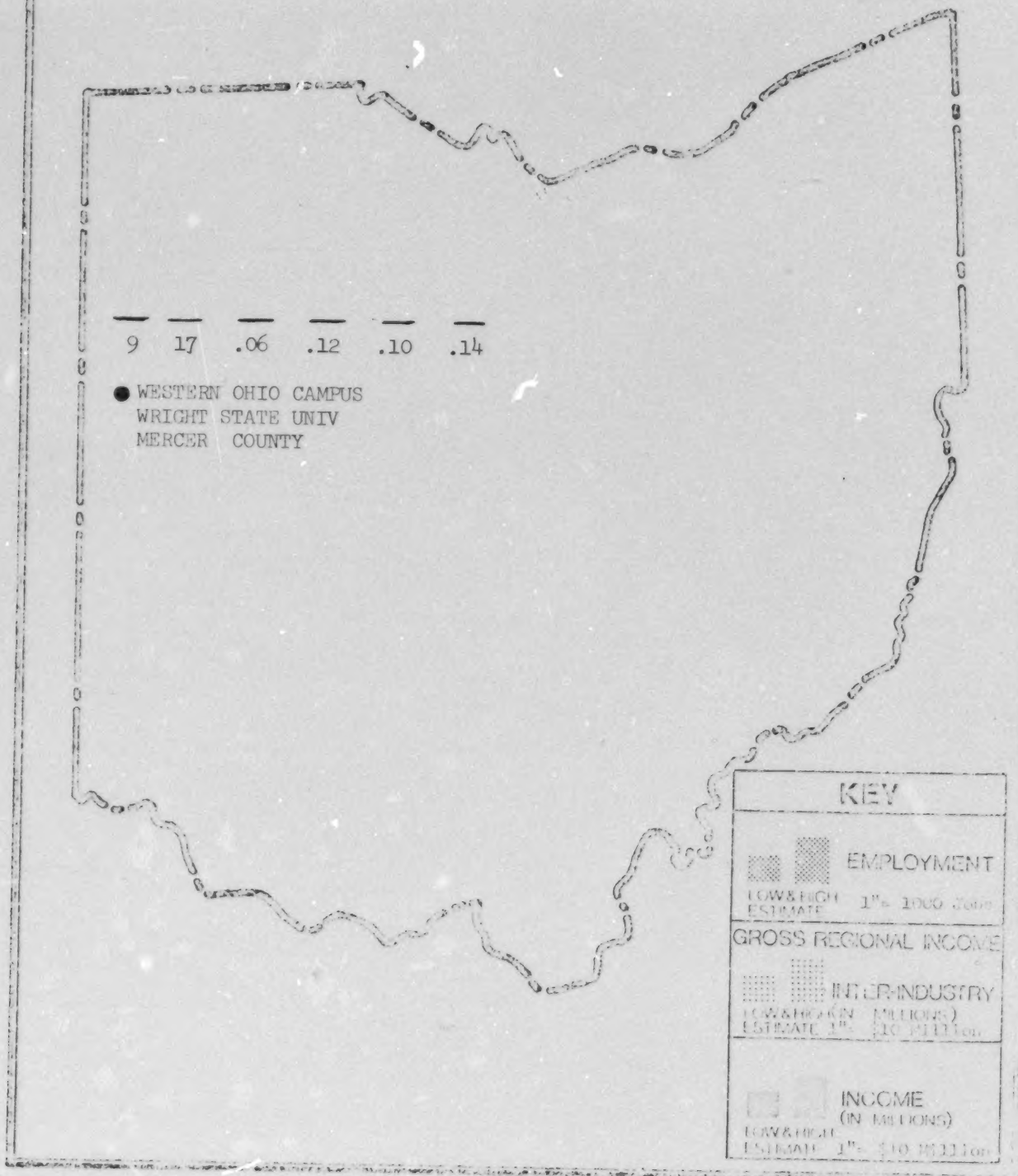
The county compares favorably with average income figures recorded by the survey of the counties included in this report. The median family income in the county was $9574, as compared to a statewide average of $9844. The mean income of families with a female head was $7591. The mean income of families earning incomes less than the poverty level was $2136, and 6.3 percent of the county's families were classified in this category. By comparison an average of 7.9 percent of the families in the 35 counties covered by this report were classified as earning incomes below the poverty level.

The county's labor force is dominated by the following professions: operatives except transport (22.47 percent), craftsmen and foremen (15.60 percent), and clerical workers (12.56 percent). The county is lacking somewhat in professional and technical workers (8.41 percent), but has a higher than normal percentage of farm workers (6.29 percent).

Employment in the county, which has been included in the Dayton region, experienced a drop in total employment of .9 percent. Construction employment increased by 4.9 percent over the calendar year 1974, but dropped by 6.1 percent in December, indicating a seasonal slump for the industry.

The capital expenditures budget allocates $95,000 to the Western Ohio Campus. The direct effect of this expenditure would be the creation of 3 new construction jobs. The inter-industry effect upon the Gross Regional Product would range from a low of $59,631 to a high of $115,553. The income multiplier would have positive effect on the GRP of anywhere $100,890 to $139,793. The indirect impact on the county's labor market would be an increase of 6 to 14 additional jobs.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



MIAMI COUNTY

EDISON STATE GENERAL AND TECHNICAL COLLEGE

Located in the western part of Ohio, Miami County lies immediately to the north of Dayton.

The median family income of $10,233 is slightly above average for the state while the mean family income is $11,108 for all families and $5892 for families with female heads. Only 6.2 percent of the families live below the poverty level as compared to the state average of 7.9 percent. The mean income of these poor families is $1837 a year.

The technical, professional and managerial workers constitute 17.77 percent of the total work force but the largest single employment group is operatives other than transport. This group alone constitutes 22.73 percent of the total labor force. Otherwise this county displays employment characteristics nearly typical for the state as a whole.

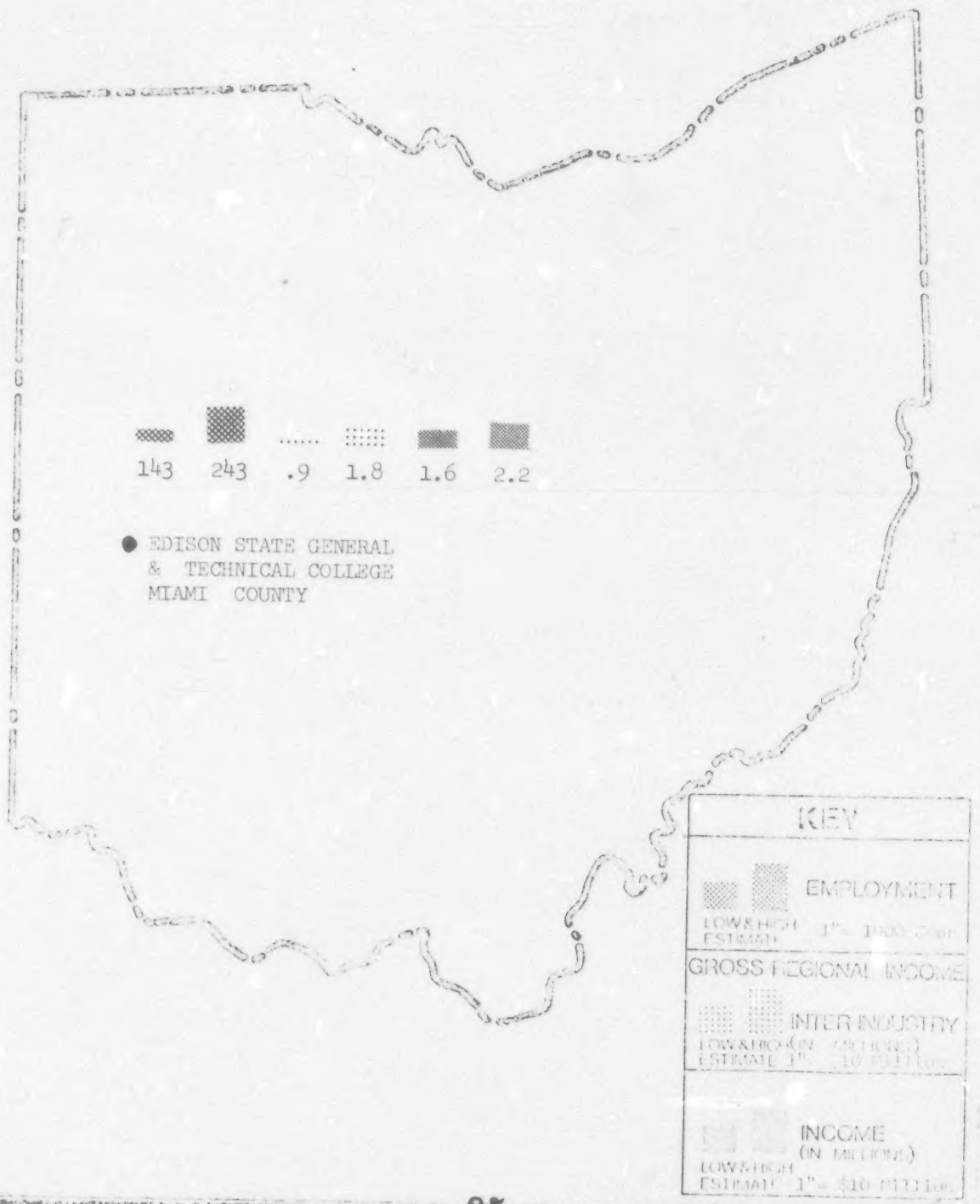
Concerning housing stock in Miami County, the two periods which depart most from the average are the 1950-56 period where only 15.10 percent of the present housing stock was built, compared to a state average of 19.52 percent. The lack of housing built in this period is compensated by houses built before 1940. 54.45 percent of Miami's housing was built before 1940 as opposed to 49.93 percent for the state as a whole. The value of these structures however, displays a respectable average worth $16,400.

Age distribution in the county deviates little from the state pattern. The only conspicuous difference in age population is in the 15-21 age group where 11.31 percent of Miami's residents fall below the state average of 13.66 percent.

The proportion of high school graduates is fairly high in this county with 54.6 percent of the males and 56.2 percent of the females completing high school. The median school years completed is equal for both sexes, however, with the figure being 12.1.

The total capital expenditures of $1,500,000 for Edison State General and Technical College will directly realize 43 jobs and indirectly amount to anywhere from 100 to 200 jobs. Also in this period the inter-industry effects will be from $941,548 to $1.824,521. The income effects will be at least $1,593,000 and perhaps as much as $2,207,250.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



MONTGOMERY COUNTY

SINCLAIR COMMUNITY COLLEGE

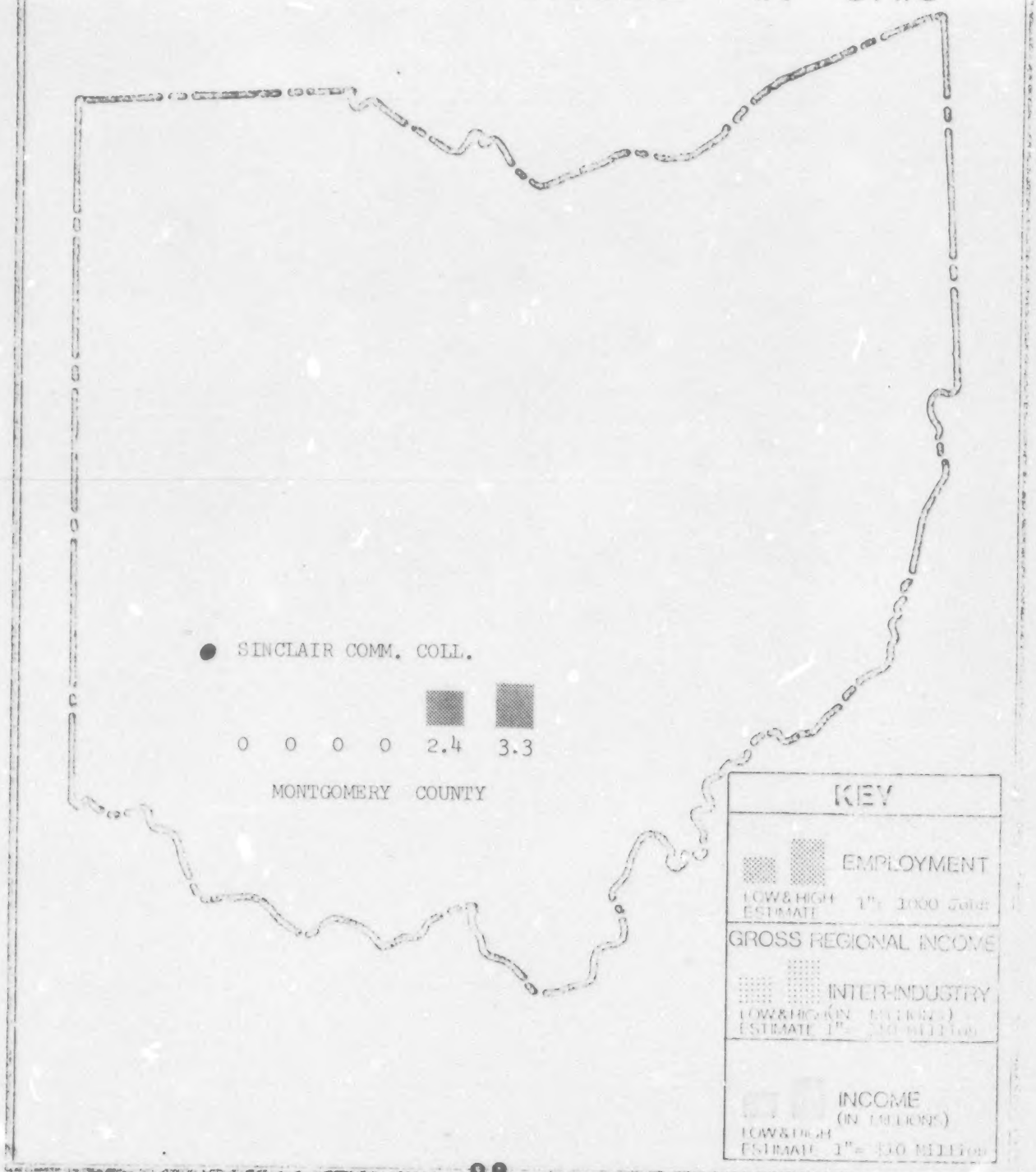
Sinclair Community College is located in the city of Dayton in Montgomery County. Being a relatively prosperous county by state standards, it is not surprising to find that income statistics reflect this prosperity. Median income in the county is $11,413 which is substantially above the average median income level for all counties in the state of $9844 (almost 16 percent). The mean income of families with a female head of family is $6891, while the mean family income of families below the Census Bureau defined poverty level is $1811. County prosperity is again reflected in the comparison of percentage of families in the county below the poverty level (6.1 percent) and the state average (7.9 percent).

The population age distribution is quite typical and corresponds quite closely to the age distribution means for all counties in the state. A survey of the educational achievements of the residents shows that both males and females over 25 years have a median schooling of 12.2 years; 54.9 percent and 56 percent of males and females (over 25 years) respectively, are high school graduates.

A relatively evenly distributed labor force (with the exception of the absence of farming) would seem to indicate a broad and stable economic base for the county. 7.56 percent of the work force are engaged in non-farm management or administration; 7.08 percent are sales workers, and 15.89 percent are professional or technical workers. A look at the county housing characteristics shows that construction is an active industry in the county. There is only 31.95 percent of the existing housing having been built prior to 1939, as compared with a state mean of almost 50 percent. The percentage of total housing stock built in 1969 is slightly greater than the state mean for all counties. Almost 53 percent of the total housing stock was built prior to 1950, as compared to a state average of 40.5 percent during the same period.

The $1 million capital expenditures budgeted for Sinclair Community College are scheduled for land purchase. This results in there being no employment or inter-industry effects from this investment. However, there will be a noticeable income effect contributing to GRP of at least $2,360,000 and at most $3,270,000.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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MUSKINGUM COUNTY

ZANESVILLE BRANCH OF OHIO UNIVERSITY

AND

MUSKINGUM TECHNICAL COLLEGE

The Zanesville Campus is located in Muskingum County in southwest central Ohio, almost due east of Columbus, Ohio.

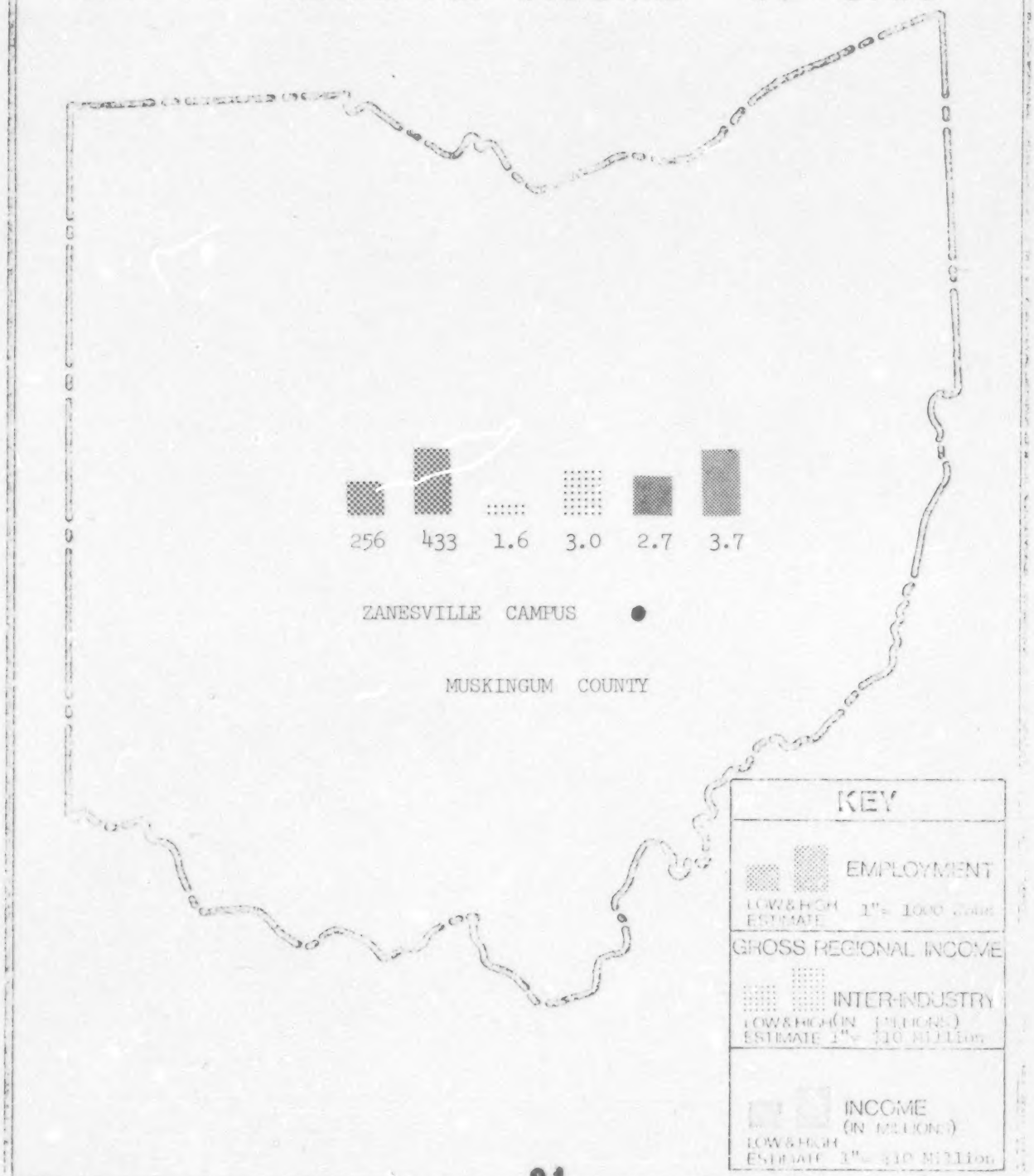
A relatively poor county, Muskingum has a median family income of $8313, 84.4 percent of the average median income for all counties in Ohio. Mean family income is $8952. The poor financial situation of the county is again reflected in the fact that 10.9 percent of all families have incomes falling below the census defined poverty level. This compares unfavorably with state average of 7.9 percent. The mean family income of those below the poverty level is $2041. The age distribution of the population is fairly typical, however, the slight deviations from state means for age groups accumulate and are reflected in the population over 60 years old having slightly more than 3 percent more people than the state average. In Muskingum 16.40 percent of the population is 60 years old or older, whereas for the state as a whole 13.27 percent of the population is 60 years old or older.

The educational achievement of the residents is also relatively low. For males 25 years and over, the median number of years completed is 11.8, and less than half (48.5 percent) are high school graduates. The statistics for women 25 years and over are slightly higher.

The distribution of the labor force by occupation in the Muskingum County area in some degree explains the relatively low income of the county. Only 10.32 percent of the work force is engaged in professional or technical occupations, whereas almost 20 percent of the work force is employed as non-transport operatives. The age distribution of the housing stock shows a historical depression and inactivity in the construction industry in the county. Over 60 percent of the total housing stock in the county was built prior to 1940, as compared to a 50 percent state mean for this period. Housing built in 1969 accounts for only 2.6 percent of the total stock for the county, while in the average county 2.98 percent of the stock was built in 1969.

The Zanesville Campus capital improvements budget calls for $2.5 million to be invested. Direct employment resulting from this expenditure would be 82 new jobs. Indirect employment effects should account for an additional 174 to 351 jobs. The income effect for the two year period should result in $2,655,000 to $3,378,750 increase in the GRP level. For the same period, inter-industry effects should add an additional $1,569,246 to $3,040,868 to the GRP.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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PORTAGE COUNTY

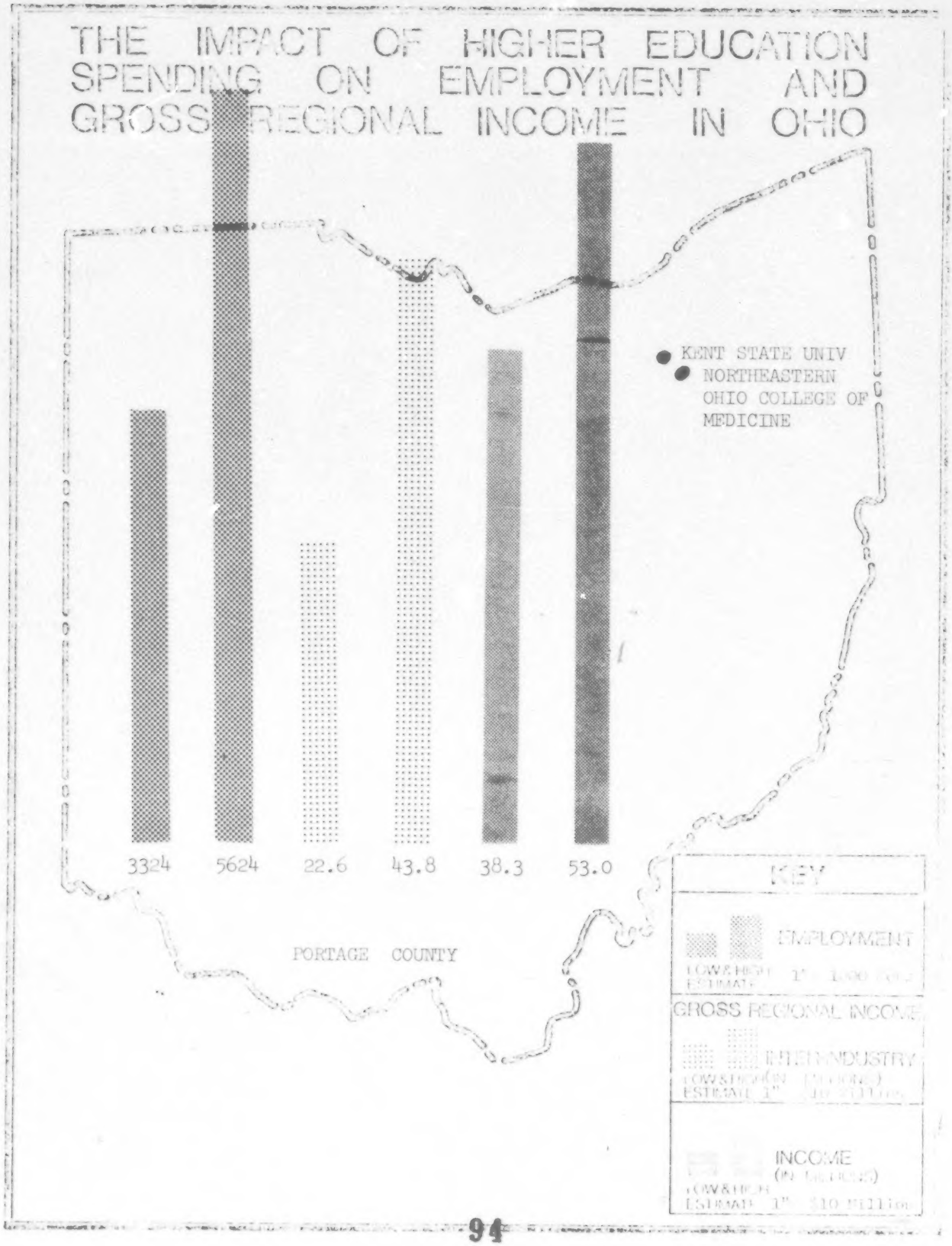
a) KENT STATE UNIVERSITY

b) NORTHEASTERN OHIO UNIVERSITIES COLLEGE OF MEDICINE

Portage County contains two campuses that are slated to receive State funds during the next biennium. Northeastern Ohio Universities College of Medicine located in Rootstown and Kent State University located in Kent. Portage County residents are affluent relatively to the state as a whole with a median annual income of $10,992, and only 5.2 percent of families below the poverty level. The age distribution of the county is fairly typical of the state with slightly a greater than average number of people in the 15-21 age group and less than average number in the 60 and above age group. The educational attainments are typical of the state with more than 50 percent having attained a high school education with a median school years completed of just over 12 years. As far as occupational structure is concerned over 20 percent of the labor force are professional, technical, managers and administrators and over 20 percent are craftsmen, foremen, and laborers. Using the age distribution of the housing stock as an index of the health of the construction industry we find that construction has been more active in recent years than is typical for the state. With over 30 percent having been constructed in the last 15 years.

The budget proposes that $11,150,000 be allocated to Kent State University. The direct and indirect employment effects will be between 1028 and 1740 new jobs. The income effect on Gross Regional Product will be between $11,841,300 and $16,407,225 and the inter-industry effect will be between $6,998,838 and $13,562,269.

Northeastern Ohio Universities College of Medicine is proposed to received $24,900,000 and it is expected that this will result in the creation of between 2296 and 3884 new jobs due to direct and indirect effects. The income effect on Gross Regional Product will be between $26,443,800 and $36,640,350 and the inter-industry effect will be between $15,629,693 and $30,287,040.


THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO
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PORTAGE COUNTY
KEY
EMPLOYMENT
GROSS REGIONAL INCOME
R.E.I.M. INDUSTRY
INCOME

RICHLAND COUNTY

MANSFIELD BRANCH OF OHIO STATE UNIVERSITY

AND

NORTH CENTRAL TECHNICAL COLLEGE

Located within the boundaries of Richland County, the Mansfield Campus is in the north central region of Ohio. Slightly above the average for Ohio in all respects of income characteristics, Richland County has as a whole, a median family income of $10,117 a mean family income of $10,997, only 7.1 percent of all families falling below the Census defined poverty level, compared to 7.9 percent for the rest of the state. Families in the county with a female head have a mean income of $5738, and the mean family income of those families below the poverty level is $1871.

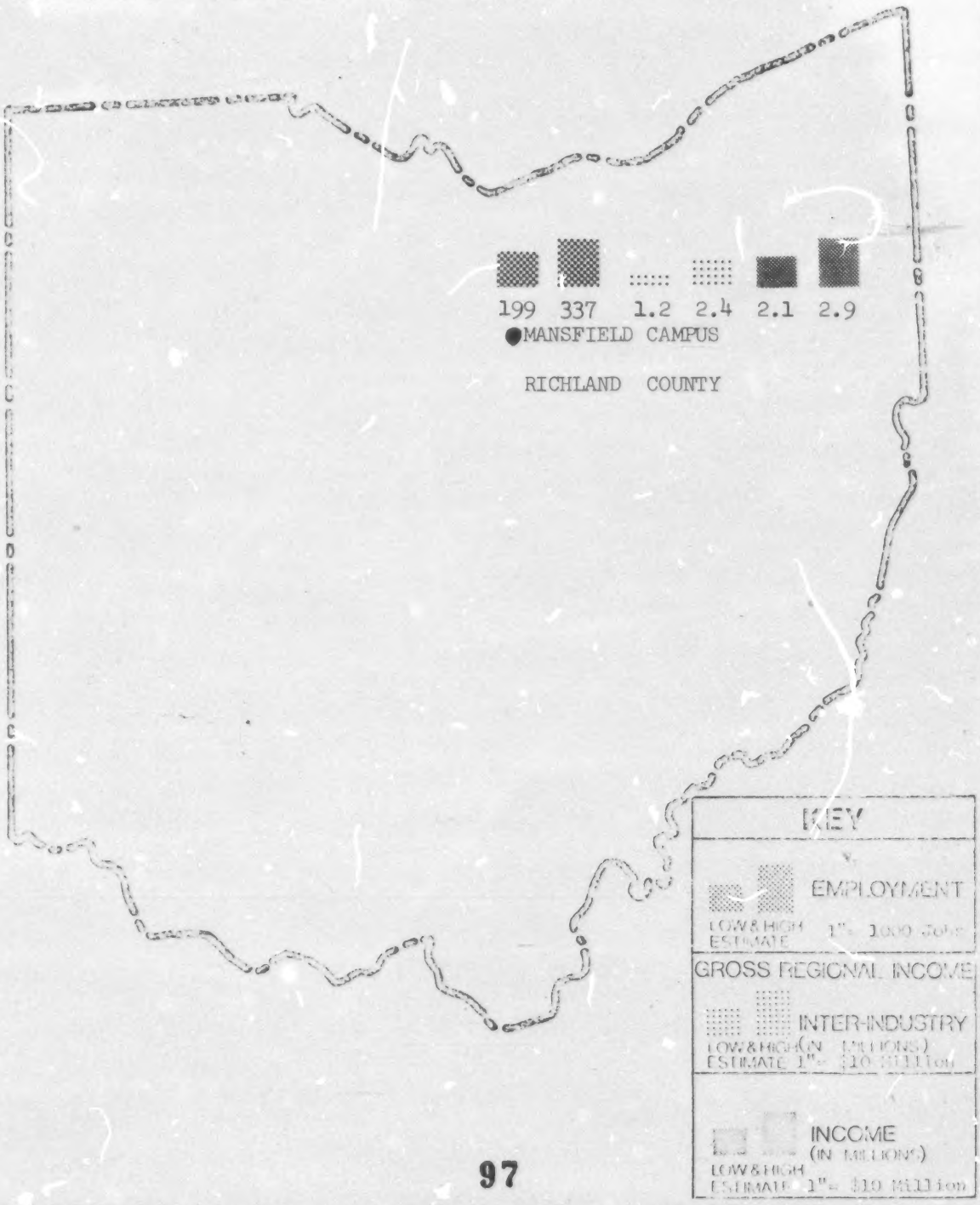
The age distribution of the population within the county is extremely close to the mean distribution for all counties in Ohio. The educational level of achievement of the county residents is also quite average for Ohio.

Roughly 49 percent of the males 25 years and older completed high school whereas almost 53 percent of the females in the same age range graduated. The median school years completed for both sexes is twelve years.

The county is again quite typical in terms of housing stock, however, only 43.21 percent of the county housing was constructed prior to 1940, while the mean of other counties in the state was 49.93 percent. The labor force is well balanced and fairly evenly distributed. Almost 11 percent of the total work force is engaged in professional or technical work, while a somewhat high percentage (22.44), is non-transport operatives.

The capital expenditures request for Mansfield is $1,950,000. Direct employment from this will total 64 new jobs, while the indirect employment will range between 135 to 273 additional new jobs. Income multipliers and effects will increase the GRP by $2,070,900 to $2,869,425. In addition, the inter-industry effects will contribute between $1,224,012 and $2,371,877 to the total GRP.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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SANDUSKY COUNTY

TERRA TECHNICAL COLLEGE

98

Terra Technical College is located in the town of Fremont in Sandusky County. The town is situated in the northern part of the state approximately 30 miles southeast of Toledo.

In terms of income characteristics, the county compares favorably with statewide averages. The median family income in the county was $9807, as compared with an average income of $9844 of those counties included in the sample for this report. The mean income of those families with a female head was $5787. The mean income of those families earning incomes less than the poverty level was $2075, with 6.9 percent of the county's families being classified in this category. This compares with a statewide average of 7.9 percent of families lying in the poverty category.

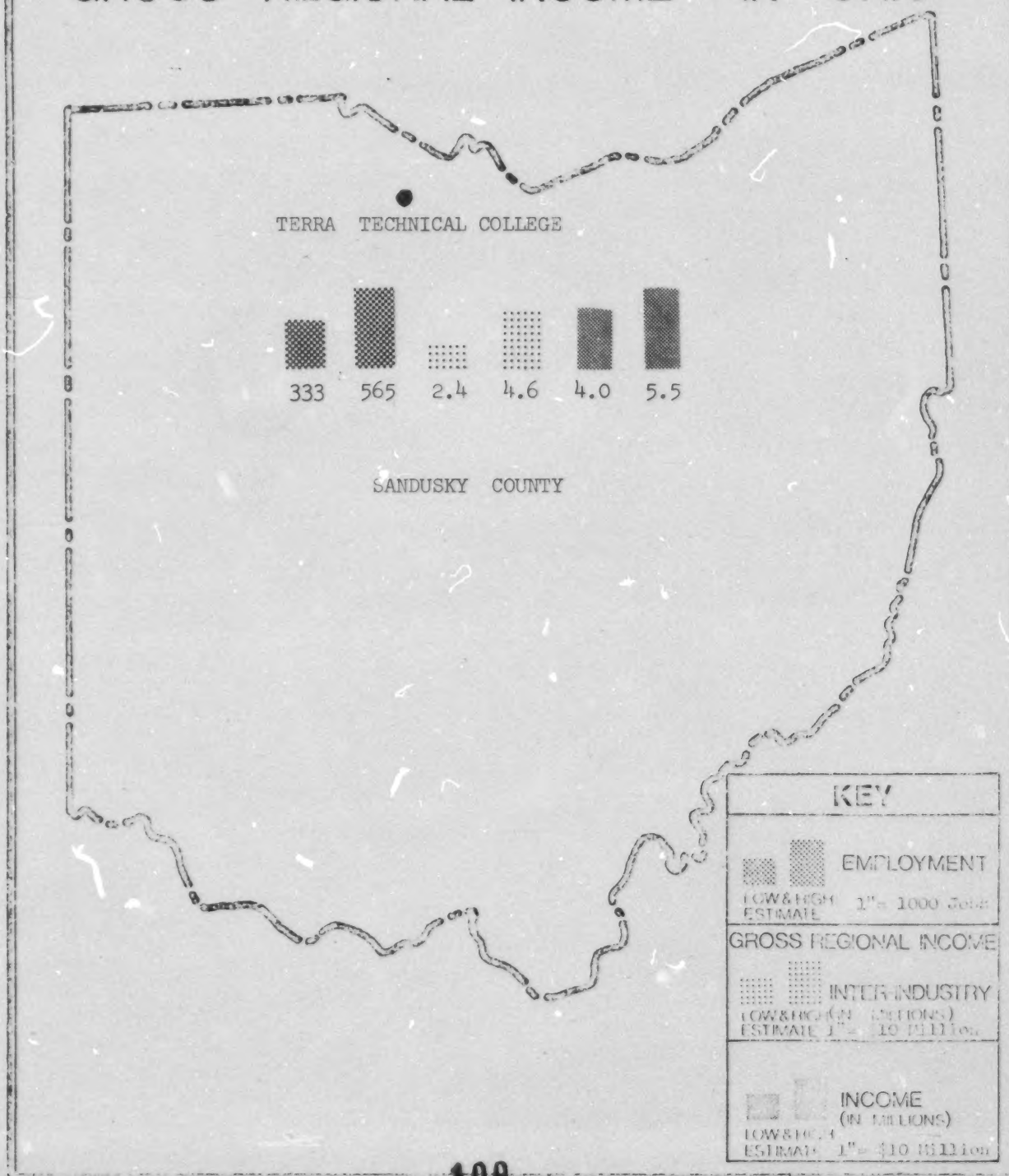
The distribution of the labor force is consistent with that of many of the other 34 counties sampled, with the exception that the county seems to lack in the area of professional workers, as only 10 percent of the county's labor force is included in this category. The age distribution of the residents of the county is consistent with other results, as roughly 50 percent of the residents have graduated from high school.

The region has experienced a drop of 1.4 percent in total employment over 1974, with construction employment dropping 6.2 percent in the same period. A survey of housing starts indicated that 60 percent of the houses in the county were built before 1940, indicating the possibility of a weak construction industry in the county.

The budget proposes that $3,750,000 be spent at Terra Technical College.

The proposed expenditure of $3,750,000 would have the direct impact of creating 93 new construction jobs. Inter-industry effects would add anywhere from $2,353,869 to $4,561,301 to the Gross Regional Product. The income multiplier would have a positive effect on the GRP ranging from a low of $3,982,500 to a high of $5,518,125. The county's labor force would be increased as a result of the indirect effects of the employment multiplier by an estimated 240 to 472 new jobs.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



SCIOTO COUNTY

SHAWNEE STATE GENERAL AND TECHNICAL COLLEGE

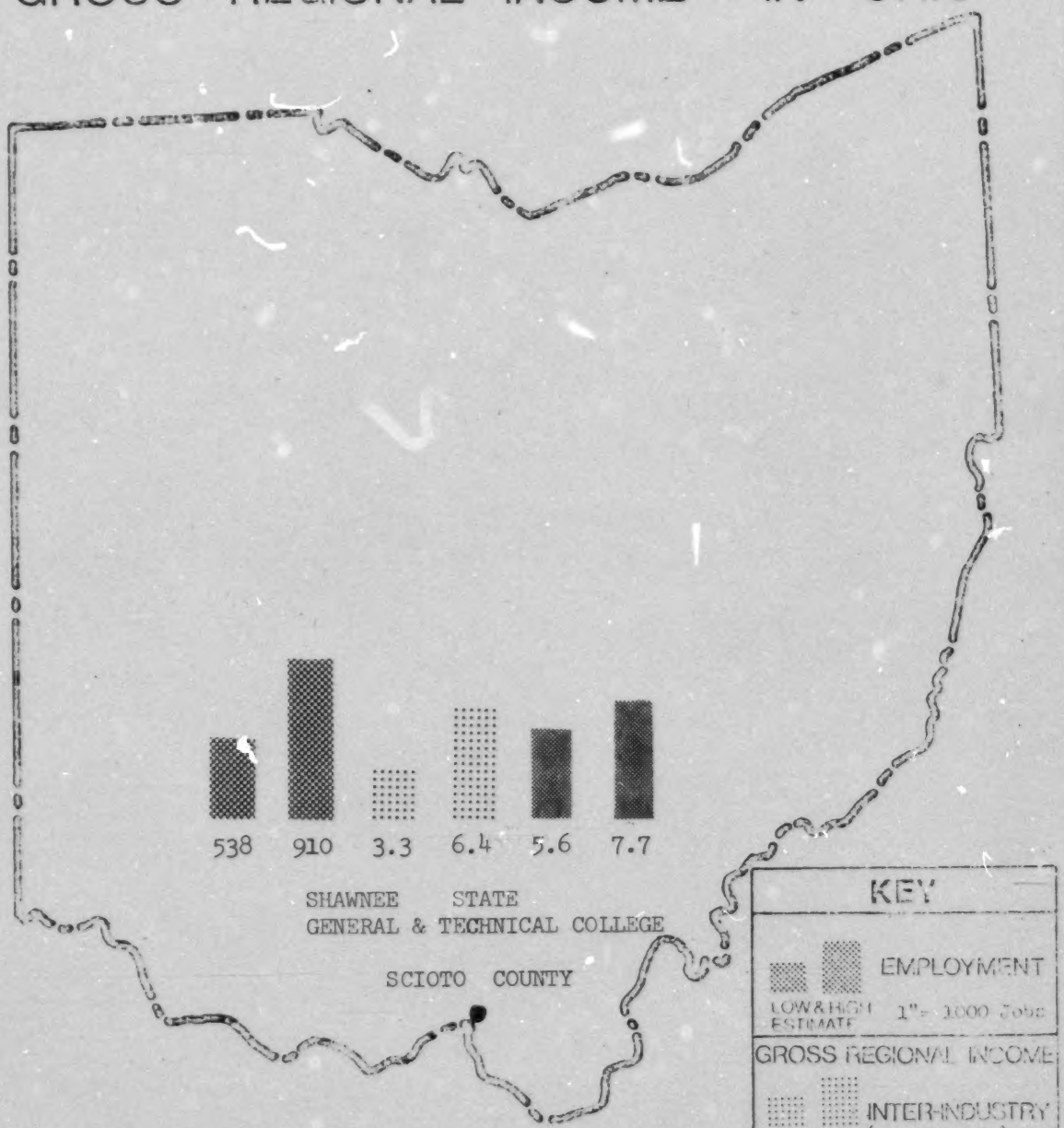
Shawnee State General and Technical College is located in the City of Portsmouth, in Scioto County, which is on the extreme southern border of Ohio.

When compared to the rest of Ohio, it is easily seen that Scioto County is relatively poor. Median family income is $7546, only 76.6 percent of the median for the state as a whole ($9844). The mean family income is $8132, and the mean income per families with a female head of house is only $4751. An alarming 16.2 percent of all families in the county are considered to be below the poverty level by the Census Bureau, whereas the average for the state as a whole is only 7.9 percent. The mean income of these poverty stricken families is $2065. The age distribution of the population is shifted towards the higher end of the scale, that is, there are a greater percentage of people 35 years and older than the mean for the rest of Ohio, and correspondingly fewer below 35 years. Of the total population of the county 17.60 percent are 60 years or older while the figure for the rest of Ohio is 13.27 percent. The county also is marked by an extremely low educational achievement level of the residents. Only 39.5 percent of males 25 years and over have completed high school while only 40.5 percent of the women of the same age range have graduated. For the same range again, the median school years completed is 10.2 for men, and 10.6 for women.

As one would expect from the income figures above, housing construction has also lagged behind the state averages; 60.29 percent of Scioto County housing was constructed before 1940 compared to a 49.93 percent mean for Ohio as a whole. Somewhat surprisingly, the labor force distribution for the county is relatively even. Of the total work force, 11.05 percent are professional or technical workers, 12.98 percent are non-transport operatives, 13.47 percent are clerical workers, and a relatively high percentage (20.42 percent) are craftsmen or foremen.

The capital expenditures budget includes $5,250,000 for Shawnee State. If approved, this expenditure would result in the direct employment of 173 workers, and the indirect employment of some 365 to 737 additional workers in related industry. Income effects would add between $5,575,500 and $7,725,375 to the Gross Regional Product, while the inter-industry effect ranges from a low estimate of $3,295,417 to a high of $6,385,822.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



STARK COUNTY

STARK COUNTY BRANCH OF KENT STATE UNIVERSITY

AND

STARK TECHNICAL COLLEGE

Stark County Branch of Kent State University and the Stark Technical College are located in Canton, Ohio, the county seat of Stark County. It is situated in the northeastern part of the state.

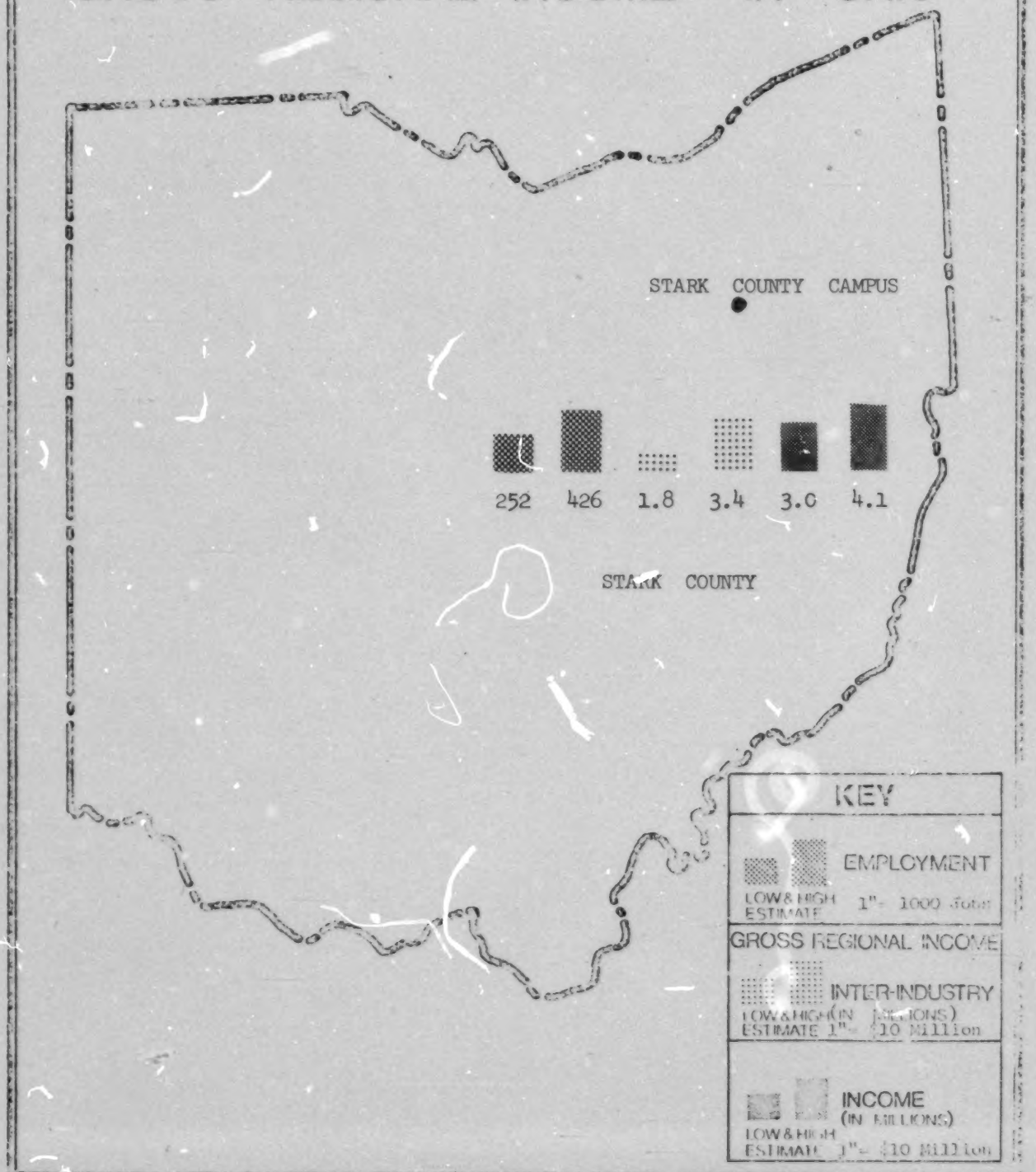
The age distribution of the population of Stark County is typical of Ohio counties with 29 percent under 15 years of age, 14 percent older than 60, and a high of 28 percent within the 35 to 59 year range. The educational achievement of the residents is 12.0 for males, 12.1 for females with 51 percent within the males and 53 percent of the females high school graduates.

The median family income is $10,249 which is slightly higher than the $9844 statewide average. The mean family income of the county is $11,292, indicating a large number of families with significantly higher incomes than the median. The mean family income of those less than poverty level is $1817 with 5.8 percent of the county's families in this category. Families with female heads have a mean income of $6538. As with most counties in Ohio, most of the labor force is contained in three categories, operatives except transport, 19.0 percent, craftsmen, foremen, and kindred workers, 16.6 percent, and clerical and kindred workers, 15.7 percent. However, there are 12.7 percent professional, technical, and kindred workers, and 5.3 percent non-farm laborers, indicating a varied industrial base.

Housing characteristics show Stark County to have a housing stock similar to that of the rest of the state. Housing starts in 1969 were 2.86 percent of the total, compared with 2.98 percent statewide, and the percent of houses built before 1940 is slightly less than the state average (46.97 percent compared with 49.93 percent).

Capital expenditures in the county are stated to be $2,800,000. The employment effect predicts this to create 71 jobs directly. Indirect effects predict a creation of 181 and 355 jobs in related industries. The income effects will create an addition to the Gross Regional Product between $2,973,600 and $4,120.200, and between $1,757,556 and $3,405,772 through the inter-industry multiplier effect.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



SUMMIT COUNTY

UNIVERSITY OF AKRON

The University of Akron is located in Akron, Ohio the so called "Rubber Capital of the World," which is the county seat of Summit County. It is located in the northeastern part of the state.

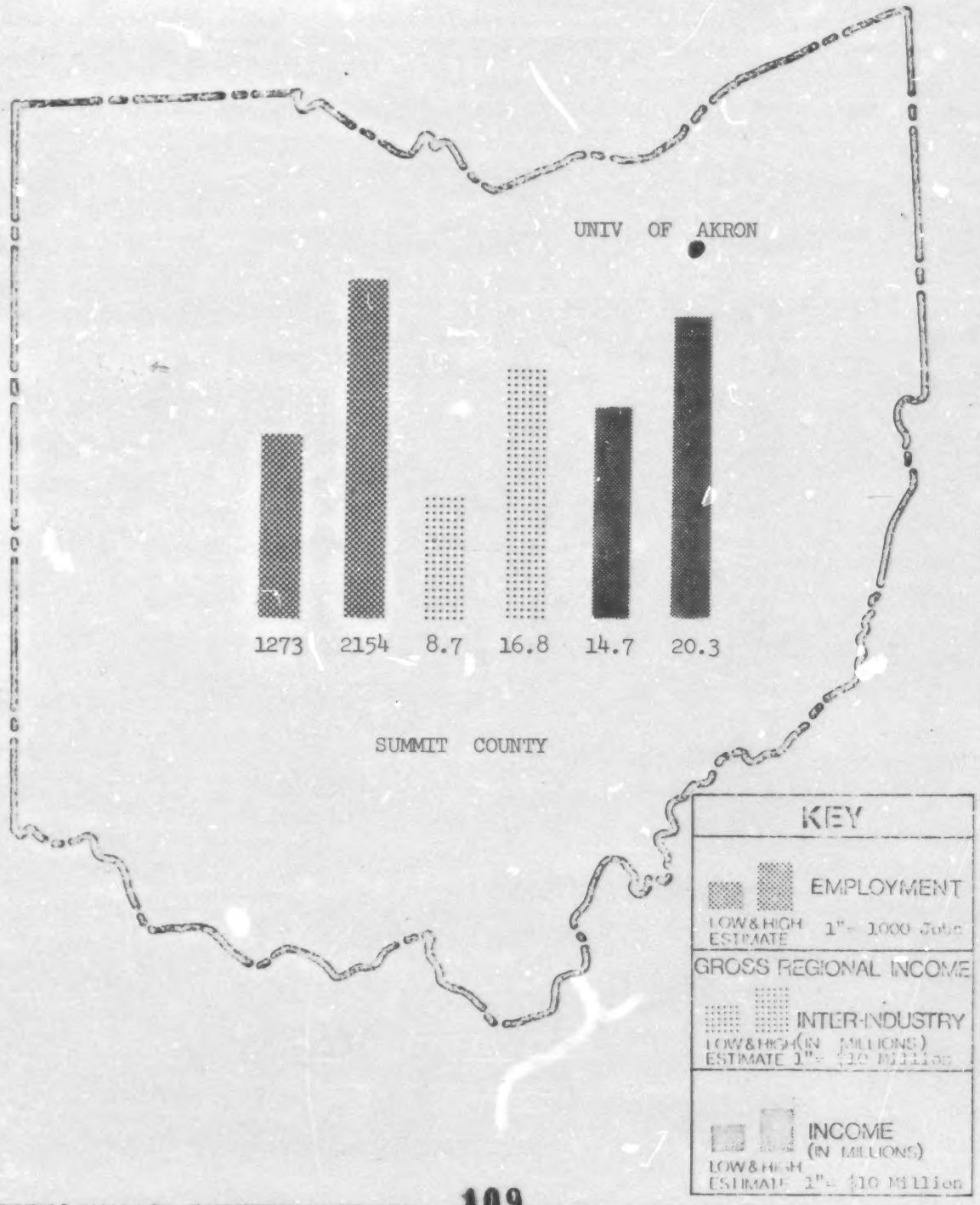
The median income of the county is $11,038, significantly higher than the statewide average of $9,844. Families with female heads have a mean income of $6,688 which is also high for that category, and only 6.3 per cent of the county's families are in this classification.

The educational achievement of the residents in Summit County is a high 12.2 for males and 12.1 for females. Over 55 per cent of the residents are high school graduates. The age distribution is in line with statewide averages; 29 per cent under 15 years of age, 13 per cent over 60 years of age, and a high of 29 per cent in the 35 to 59 year distribution.

Housing starts in 1969 lagged slightly behind statewide averages (2.72 per cent to 2.98 per cent), and between 1965 and 1968 (7.8 per cent to 8.2 per cent), although the number of homes in Summit County that were built before 1940 is lower than the statewide average, 43 per cent to 50 per cent.

The capital budget calls for $13,800,000 for the University of Akron. This will result in 369 jobs created directly. Indirect effects will create between 904 and 1,785 jobs in related industries. The income multiplier effect on the Gross Regional Product during that period will vary from $14,655,600 to $20,306,700, and the inter-industry effect will add between $8,662,239 and $16,785,589 to the GRP.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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TUSCARAWAS COUNTY

TUSCARAWAS BRANCH OF

KENT STATE UNIVERSITY

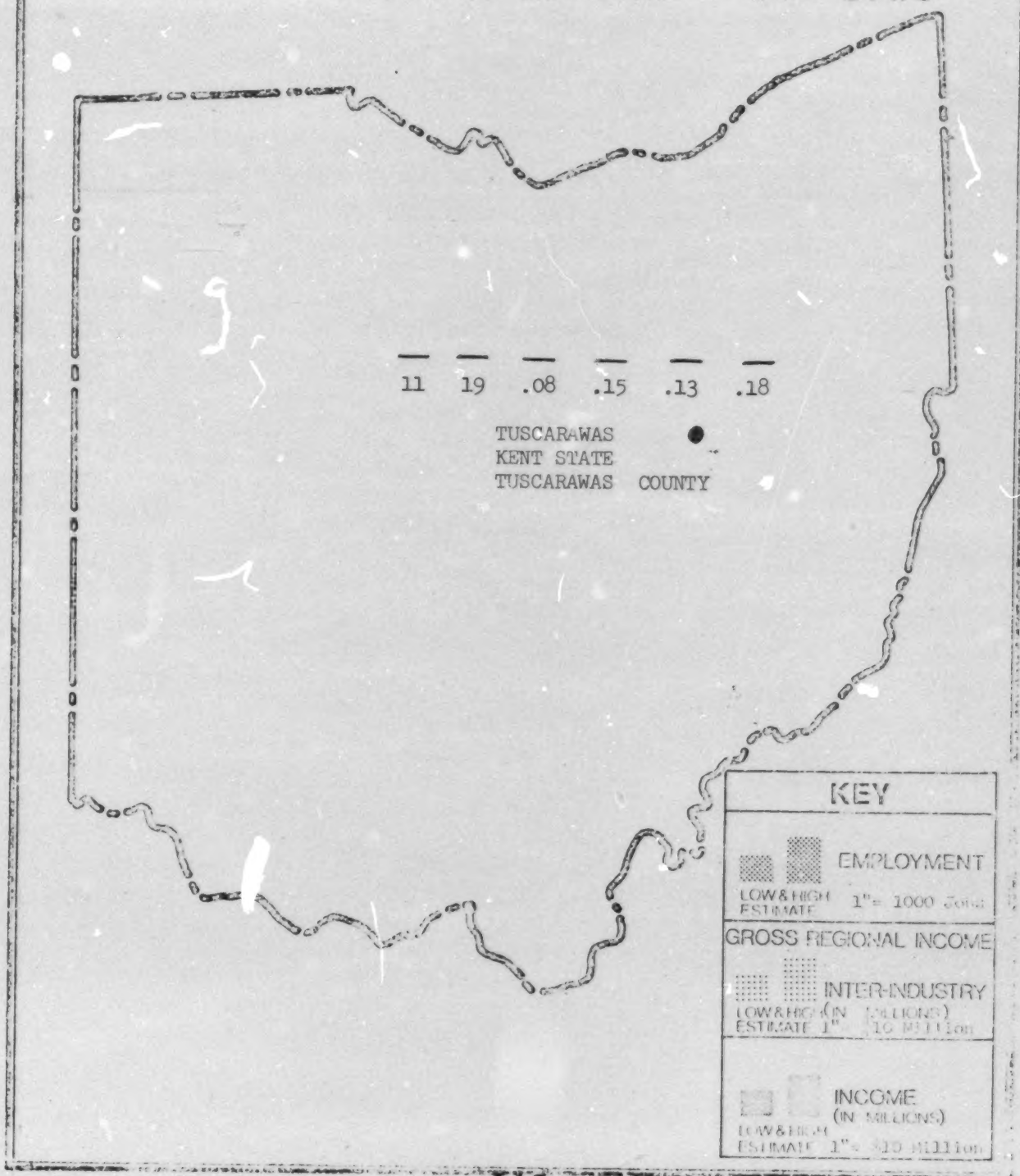
The Tuscarawas Campus is located in the City of New Philadelphia in Tuscarawas County, which lies in the east central region of Ohio.

The median family income in Tuscarawas County is $8,500, 13.2 per cent below the average median for all counties within the state. The mean family income for the county is $9,024, while the mean income for families with a female head of family is $5,701. The percentage of all families in the county which have an income below the Census defined poverty level is 8.5 per cent, compared with 7.9 per cent for the state as a whole. The age distribution of the population of the county shows a larger percentage (16.03 per cent) of the population to be 60 years or older than the mean for all Ohio counties (13.27 per cent). The educational achievement of the county residents is also somewhat below average Ohio levels. The median school years completed for all males age 25 and over is 11.8, and only 48.6 per cent of these are high school graduates. The statistics for females 25 and older are slightly higher.

A look at the housing characteristics of Tuscarawas County shows that construction has historically lagged behind the average for the state. Over 68 per cent of the housing stock was constructed before 1940, as compared to a 50 per cent mean for all Ohio. Housing construction in the county in 1969 accounted for only 1.82 per cent of the housing stock, while in the rest of Ohio the construction in the average county accounted for 2.98 per cent of the county housing stock. In terms of labor force distribution, clerical workers, craftsmen, foremen, and operatives (non-transport), accounted for slightly more than 50 per cent of the total work force, while professional and technical workers comprised less than 11 per cent.

The capital improvements budget for the Tuscarawas Campus calls for a total expenditure of $125,000 to be spent. The direct employment resulting from this would be 3 persons, while indirect employment effects should range between an additional 8 to 16 jobs. The income effect on the Gross Regional Product could range from a minimum increase of $132,750 to a maximum of $183,938, while the inter-industry multipliers could cause an additional $78,462 to $152,043 increase in GRP.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



WAYNE COUNTY

a) Wayne Branch of the - University of Akron

b) Agricultural Technical Institute - Ohio State University

c) Ohio Agricultural Research and Development Center

Wayne County is located in the north central part of the state, approximately 90 miles northeast of Columbus.

The county ranks slightly above the average income figures compiled for all the counties included in this report. The median family income was $9,992, as compared with a statewide average of $9,844. The mean income of families with a female head was $7,156. The mean income of families earning incomes less than the poverty level was $1,816, with 6.4 per cent of the county's families falling into this category. By comparison, an average 6.4 per cent of the families of all counties included in this report were classified as earning a below poverty level income.

The county's labor force is fairly consistent with statewide labor distributions, as operatives except transport (19.88 per cent), craftsmen and foremen (14.91 per cent), clerical workers (13.62 per cent), professional workers (12.16 per cent), and service workers except private household (10.89 per cent), dominating the distribution. In terms of educational achievement, the residents of the county are fairly equal to the statistics compiled statewide.

The region has experienced an increase of .5 per cent in total employment over the 1974 calendar year. Over the same period, construction employment was up 2.6 per cent even with a seasonal slump of 3.0 percent in December.

a) Wayne Branch - University of Akron

The capital expenditures budget has a total of $80,000 for the Wayne Branch. The direct result of this expenditure would be the creation of 2 construction jobs. In addition, it can be expected that an estimated 4 to 10 new jobs would be created as a result of the effects of the employment multiplier. The inter-industry multiplier would have a positive effect on the Gross Regional Product ranging from $50,216 to $97,308. The income effects on the GRP would range from a low of $84,960 to a high of $117,720.

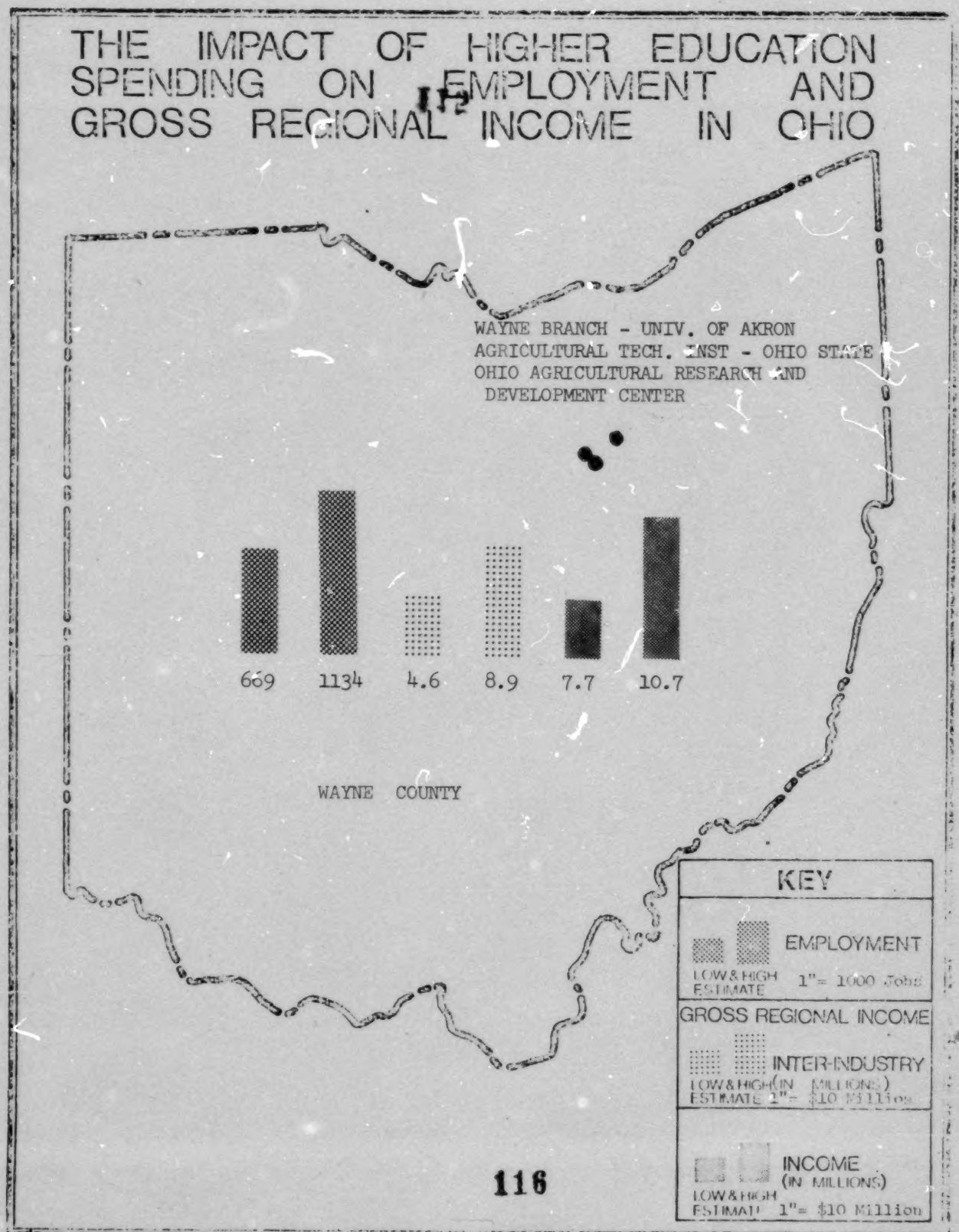
b) Agricultural Technical Institute - Ohio State University

A sum of $4,000,000 is included in the proposed budget for this institution. The impact of this expenditure would be the creation of an estimated 107 construction jobs. The employment multiplier would provide an additional 262 to 517 new jobs through indirect effects. The income multiplier would produce an increase in the GRP estimated to be a low of $4,248,000 and a high of $5,886,000. Inter-industry effects would have an additional effect on the GRP ranging from $2,510,794 to $4,865,388

c) Agricultural Research and Development Center

The capital expenditures budget proposes that $3,200,000 at this institution which would result directly in the creation of 85 construction jobs. The income multiplier would produce a positive effect on the GRP ranging from a low of $3,398,400 to a high of $4,708,800. Inter-industry effects would produce an increase in the GRP of anywhere from $2,008,635 to $3,892,310. The county's labor market would be bolstered by an estimated additional 209 to 413 new jobs.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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WOOD COUNTY

a) Bowling Green State University

b) Michael J. Owens Technical College

Wood County is located in the northwestern sector of the state directly south of Lucas County and the City of Toledo. The Bowling Green campus is situated in the town of Bowling Green and the Campus of Michael J. Owens Technical College in in the town of Perrysburg.

The income characteristics of the county rank considerably above the averages recorded statewide. The median family income in the county was $10,878, as compared with a statewide average of $9,844. The mean income of families with a female head was $9,924. The mean income of families earning an income less than poverty level was $1,782, and 5.37 per cent of the county's families were classified in this category, as compared with a statewide average of 7.9 per cent.

The distribution of the labor force in the county compares favorably with the labor distribution of the other counties sampled. One note of interest, however, is an above normal percentage (15.88 per cent) of professional and technical workers in the labor force. The age distribution shows one distinct departure from the recorded statewide averages, that being in the 14-21 age category. The high percentage (20.48 per cent) of this age group in the county is due undoubtedly at least in part to the existence of Bowling Green University.

Employment in the region dropped by .9 per cent during the 1974 calendar year. An interesting note is that the construction industry enjoyed an increase of 4.9 per cent in employment even with a seasonal slump of 6.1 per cent in December taken into account.

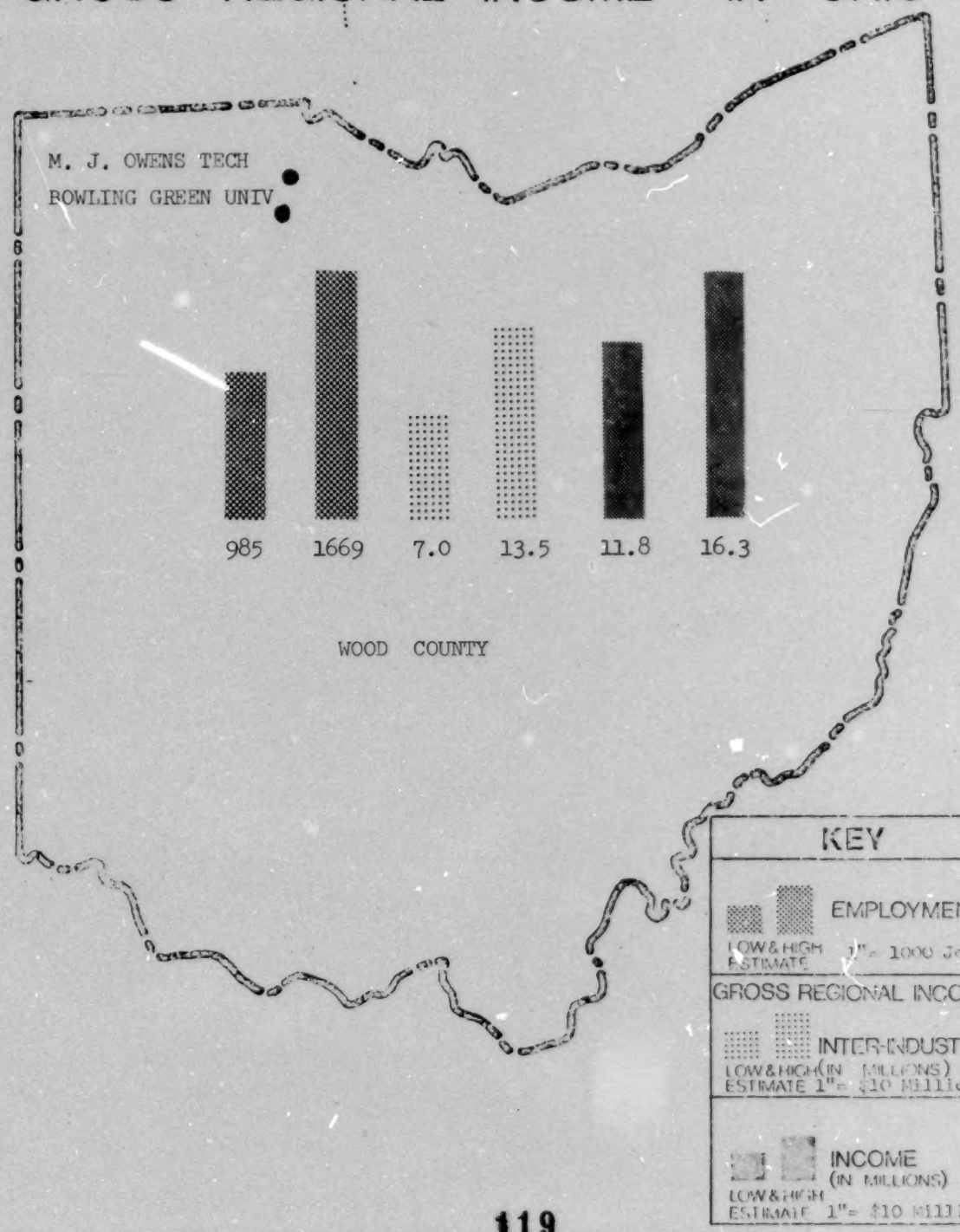
a) Bowling Green State University

The proposed budget calls for a total of $10,725,000 in capital expenditures for the Bowling Green campus. This will result in the creation of 265 construction jobs. The inter-industry multiplier would have a positive effect on the Gross Regional Product ranging from a low of $6,732,066 to a high of $13,045,322. The income effects on the GRP would range from $11,389,950 to $15,781,838. The county's labor market would be bolstered by an additional 688 to 1,349 jobs.

b) Michael J. Owens Technical College

The proposed capital budget has recommended a total of $366,000 to this institution which would result in 9 new construction jobs being created. The inter-industry effect of this expenditure would be the addition of from $229,738 to $445,183 to the Gross Regional Product. The income multiplier would have a positive impact on the GRP ranging from a low of $388,692 to a high of $538,569. The county labor force would benefit by an additional 23 to 46 new jobs being created.

THE IMPACT OF HIGHER EDUCATION SPENDING ON EMPLOYMENT AND GROSS REGIONAL INCOME IN OHIO



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APPENDIX

TABLES 1A - 1I

EMPLOYMENT EFFECTS

ESTIMATED MAN YEARS (JOBS) CREATED

TABLE 1A
MAN YEARS CREATED (EMPLOYMENT)
AKRON AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
University of Akron	$13,800,000	$ 6,210,000	$16,846	369
Kent State University	11,150,000	5,017,500	16,846	298
Wayne Branch-U. of Akron	80,000	36,000	16,846	2
Agricultural Tech. Inst.	4,000,000	1,800,000	16,846	107
Northeastern Ohio Univ. College of Medicine	24,900,000	11,205,000	16,846	665
Agricultural Research & Development Center	3,200,000	1,440,000	16,846	85
TOTAL	$57,130,000	$25,708,500		1,526

While there will be 1526 man years created from the wages coming directly from the capital expenditures, the total effect could be between 5250 and 8900 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1B
MAN YEARS CREATED (EMPLOYMENT)
CANTON AREA

Institution	Capital Expenditures	Percent To Wages	Cost Per Man Year	Man Years Directly Created
Stark Co. Campus	$ 2,800,000	$ 1,260,000	$17,660	71
Tuscarawas Branch - KSU	125,000	56,250	17,660	3
TOTAL	$ 2,925,000	$ 1,316,250		74

While there will be 74 man years created from the wages coming directly from the capital expenditures, the total effect could be between 250 and 450 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1C
MAN YEARS CREATED (EMPLOYMENT)
CINCINNATI AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Univ. of Cincinnati	$ 8,500,000	$ 3,825,000	$15,062	254
Miami University	18,450,000	8,302,500	15,062	551
Cincinnati Tech	4,500,000	2,025,000	15,062	134
Clermont Branch- University of Cincinnati	60,000	27,000	15,062	2
TOTAL	$31,510,000	$14,179,500		941

While there will be 941 man years created from the wages coming directly from the capital expenditures, the total effect could be between 3000 and 5150 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1D
MAN YEARS CREATED (EMPLOYMENT)
CLEVELAND AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Cleveland State	$15,525,000	$ 6,986,250	$17,964	389
Cuyahoga Community Coll	12,000,000	5,400,000	17,964	301
Lakeland Community Coll	2,411,000	1,084,950	17,964	60
Lorain Community Coll	300,000	135,000	17,964	8
Ashtabula Branch-Kent State University	100,000	45,000	17,964	3
Case Western Reserve	750,000	337,500	17,964	19
TOTAL	$31,086,000	$13,988,700		780

While there will be 780 man years created from the wages coming directly from the capital expenditures, the total effect could be between 2800 and 4700 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1E
MAN YEARS CREATED (EMPLOYMENT)
COLUMBUS AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Ohio State	$25,050,000	$11,272,500	$13,693	823
Mansfield Campus	1,950,000	877,500	13,693	64
Newark Campus	1,425,000	641,250	13,693	47
Zanesville Campus	2,500,000	1,125,000	13,693	82
Columbus Tech	3,475,000	1,563,750	13,693	114
Lancaster Branch - Ohio University	900,000	405,000	13,693	30
TOTAL	$35,300,000	$15,885,000		1160

While there will be 1160 man years created from the wages coming directly from the capital expenditures, the total effect would be between 3600 and 6100 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1F
MAN YEARS CREATED (EMPLOYMENT)
DAYTON AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Central State	$ 8,025,000	$ 3,611,250	$15,841	228
Wright State	17,225,000	7,751,250	15,841	489
Edison State Gen. & Technical	1,500,000	675,000	15,841	43
Southern State	1,000,000	450,000	15,841	28
Clark Technical	350,000	157,500	15,841	10
Western Ohio Branch-Wright State	95,000	42,750	15,841	3
TOTAL	$28,195,000	$12,687,750		801

While there will be 801 man years created from the wages coming directly from the capital expenditures, the total effect could be between 2700 and 4500 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1G
MAN YEARS CREATED (EMPLOYMENT)
SOUTHEASTERN OHIO AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Ohio University	$ 4,175,000	$ 1,878,000	$13,693	137
Rio Grande Community Coll	2,000,000	900,000	13,693	66
Shawnee State	5,250,000	2,362,500	13,693	173
Hocking Technical	2,900,000	1,305,000	13,693	95
TOTAL	$14,325,000	$ 6,445,500		471

While there will be 471 man years created from the wages coming directly from the capital expenditures, the total effect could be between 1500 and 2500 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 1H
MAN YEARS CREATED (EMPLOYMENT)
TOLEDO-AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Bowling Green State	$10,725,000	$ 4,826,250	$18,204	265
University of Toledo	10,375,000	4,668,750	18,204	256
Northwest Tech Coll	950,000	427,500	18,204	23
M. J. Owens Tech Coll	366,000	164,700	18,204	9
Terra Technical Coll	3,750,000	1,687,500	18,204	93
Medical College of Ohio At Toledo	7,500,000	3,375,000	18,204	185
TOTAL	$33,666,000	$15,149,700		831

While there will be 831 man years created from the wages coming directly from the capital expenditures, the total effect could be between 3000 and 5050 man years (jobs) directly or indirectly created from the total expenditures.

TABLE 11
MAN YEARS CREATED (EMPLOYMENT)
YOUNGSTOWN AREA

Institution	Capital Expenditures	Percent to Wages	Cost Per Man Year	Man Years Directly Created
Youngstown State	$4,050,000	$1,822,500	$16,975	107
Jefferson Technical	125,000	56,250	16,975	3
TOTAL	$4,175,000	$1,878,750		110

While there will be 110 man years created from the wages coming directly from the capital expenditures, the total effect could be between 400 and 650 man years (jobs) directly or indirectly created from the total expenditures.

APPENDIX

TABLE 2

INCOME MULTIPLIER EFFECTS

TABLE 2
INCOME MULTIPLIER EFFECTS

INSTITUTION	Wage Bill Generated by Capital Expenditures	Growth in Gross Regional Product	
		Low Multiplier (2.36)	High Multiplier (3.27)
Akron Area			
University of Akron	$ 6,210,000	$ 14,655,600	$ 20,306,700
Kent State University	5,017,500	11,841,300	16,407,225
Wayne Branch - University of Akron	36,000	84,960	117,720
Agricultural Technical Institute	1,800,000	4,248,000	5,886,000
Northeastern Ohio Universities College of Medicine	11,205,000	26,443,800	36,640,350
Agricultural Research and Development Center	1,440,000	3,398,400	4,708,800
TOTAL	$25,708,500	$ 60,672,060	$ 84,066,795
Canton Area			
Stark County Campus	$ 1,260,000	$ 2,973,600	$ 4,120,200
Tuscarawas Branch - Kent State	56,250	132,750	183,938
TOTAL	$ 1,316,250	$ 3,106,350	$ 4,304,138
Cincinnati Area			
University of Cincinnati	$ 3,825,000	$ 9,027,000	$ 12,507,750
Miami University	8,302,500	19,593,900	27,149,175
Cincinnati Technical College	2,025,000	4,779,000	6,621,750
Clermont Branch - University of Cincinnati	27,000	63,720	88,290
TOTAL	$14,179,500	$ 33,463,620	$ 46,366,965

TABLE 2
INCOME MULTIPLIER EFFECTS

INSTITUTION	Wage Bill Generated by Capital Expenditures	Growth in Gross Regional Product	
		Low Multiplier (2.36)	High Multiplier (3.27)
Cleveland Area			
Cleveland State University	$ 6,986,250	$ 16,487,550	$ 22,845,038
Cuyahoga Community College	5,400,000	12,744,000	17,658,000
Lakeland Community College	1,084,950	2,560,482	3,547,787
Lorain Community College	135,000	318,600	441,450
Ashtabula Branch Kent State University	45,000	106,200	147,150
Case Western Reserve University	337,500	796,500	1,103,625
TOTAL	$ 13,988,700	$ 33,013,332	$ 45,743,050
Columbus Area			
Ohio State University	$ 11,272,500	$ 26,603,100	$ 36,861,075
Mansfield Campus	877,500	2,070,900	2,869,425
Newark Campus	641,250	1,513,350	2,096,888
Zanesville Campus	1,125,000	2,655,000	3,678,750
Columbus Technical Institute	1,563,750	3,690,450	5,113,462
Lancaster Branch - Ohio University	405,000	955,800	1,324,350
TOTAL	$ 15,885,000	$ 37,488,600	$ 51,943,950
Dayton Area			
Central State University	$ 3,611,250	$ 8,522,550	$ 11,808,788
Wright State University	7,751,250	18,292,950	25,346,588
Edison State General & Tech	675,000	1,593,000	2,207,250
Southern State General & Tech	450,000	1,062,000	1,471,500
Clark Technical College	157,500	371,700	515,025
Western Ohio Branch - Wright State	42,750	100,890	139,793
TOTAL	$ 12,687,750	$ 29,943,090	$ 41,488,944

TABLE 2
INCOME MULTIPLIER EFFECTS

INSTITUTION	Wage Bill Generated by Capital Expenditures	Growth in Gross Regional Product	
		Low Multiplier (2.36)	High Multiplier (3.27)
Southeastern Ohio Area			
Ohio University	$ 1,878,000	$ 4,432,080	$ 6,141,060
Rio Grande Community College	900,000	2,124,000	2,943,000
Shawnee State General & Tech	2,362,500	5,575,500	7,725,375
Hocking Technical College	1,305,000	3,079,800	4,267,350
TOTAL	$ 6,445,500	$ 15,211,380	$ 21,076,785
Toledo Area			
Bowling Green State Univ	$ 4,826,250	$ 11,389,950	$ 15,781,838
University of Toledo	4,668,750	11,018,250	15,266,813
Northwest Technical College	427,500	1,008,900	1,397,925
M. J. Owens Technical College	164,700	388,692	538,569
Terra Technical College	1,687,500	3,982,500	5,518,125
Medical College of Ohio at Toledo	3,375,000	7,965,000	11,036,250
TOTAL	$ 15,149,700	$ 35,753,292	$ 49,539,520
Youngstown Area			
Youngstown State University	$ 1,822,500	$ 4,301,100	$ 5,959,575
Jefferson Technical Institute	56,250	132,750	183,938
TOTAL	$ 1,878,750	$ 4,433,850	$ 6,143,513

APPENDIX

TABLE 3

INTER - INDUSTRY MULTIPLIER EFFECT

TABLE 3
INTER-INDUSTRY MULTIPLIER EFFECT

INSTITUTION	Value of Inputs Generated By Capital Expenditures	Inter-Industry Effect on Gross Regional Product	
		Low Multiplier (1.14127)	High Multiplier (2.21154)
Cleveland Area			
Cleveland State University	$ 8,538,750	$ 9,745,019	$ 18,883,787
Cuyahoga Community College	6,600,000	7,532,382	14,596,164
Lakeland Community College	1,326,050	1,513,381	2,932,613
Lorain Community College	165,000	188,310	364,904
Ashtabula Branch - Kent State University	55,000	62,770	121,635
Case Western Reserve Univ.	412,500	470,774	912,260
TOTAL	$ 17,097,300	$ 19,512,636	$ 37,811,363
Columbus Area			
Ohio State University	$ 13,777,500	$ 15,723,847	$ 30,469,492
Mansfield Campus	1,072,500	1,224,012	2,371,877
Newark Campus	783,750	894,470	1,733,294
Zanesville Campus	1,375,000	1,569,246	3,040,868
Columbus Technical Inst.	1,911,250	2,181,252	4,226,806
Lancaster Branch - Ohio University	495,000	564,929	1,094,712
TOTAL	$ 19,415,000	$ 22,157,756	$ 42,937,049
Dayton Area			
Central State University	$ 4,413,750	$ 5,037,280	$ 9,761,185
Wright State University	9,473,750	10,812,107	20,951,577
Edison State University	825,000	941,548	1,824,521
Southern State Gen'l & Tech	550,000	627,699	1,216,347
Clark Technical College	192,500	219,694	425,721
Western Ohio - Wright State University	52,250	59,631	115,553
TOTAL	$ 15,507,250	$ 17,697,959	$ 34,294,904

TABLE 3
INTER-INDUSTRY MULTIPLIER EFFECT

INSTITUTION	Value of Inputs Generated By Capital Expenditures	Inter-Industry Effect on Gross Regional Product	
		Low Multiplier (1.14127)	High Multiplier (2.21154)
Akron Area			
University of Akron	$ 7,590,000	$ 8,662,239	$ 16,785,589
Kent State University	6,132,500	6,998,838	13,562,269
Wayne Branch - Akron	44,000	50,216	97,308
Agricultural Tech Institute	2,200,000	2,510,794	4,865,388
Northeastern Ohio Universities College of Medicine	13,695,000	15,629,693	30,287,040
Agricultural Research and Development Center	1,760,000	2,008,635	3,892,310
TOTAL	$ 31,421,500	$ 35,860,415	$ 69,489,904
Canton Area			
Stark County Campus	$ 1,540,000	$ 1,757,556	$ 3,405,772
Tuscarawas Branch - Kent State	68,750	78,462	152,043
TOTAL	$ 1,608,750	$ 1,836,018	$ 3,557,815
Cincinnati Area			
University of Cincinnati	$ 4,675,000	$ 5,335,437	$ 10,338,950
Miami University	10,147,500	11,581,037	22,441,602
Cincinnati Technical College	2,475,000	2,824,643	5,473,562
Clermont Branch - University of Cincinnati	33,000	37,662	72,981
TOTAL	$ 17,330,500	$ 19,778,779	$ 38,327,095

TABLE 3
INTER-INDUSTRY MULTIPLIER EFFECT

INSTITUTION	Value of Inputs Generated By Capital Expenditures	Inter-Industry Effect on Gross Regional Product	
		Low Multiplier (1,14127)	High Multiplier (2.21154)
Southeastern Ohio Area			
Ohio University	$ 2,297,000	$ 2,621,497	$ 5,079,907
Rio Grande Community College	1,100,000	1,255,397	2,432,694
Shawnee State General & Tech	2,887,500	3,295,417	6,385,822
Hocking Technical College	1,595,000	1,820,325	3,527,406
TOTAL	$ 7,879,500	$ 8,992,636	$ 17,425,829
Toledo Area			
Bowling Green University	$ 5,898,750	$ 6,732,066	$ 13,045,322
University of Toledo	5,706,250	6,512,372	12,619,600
Northwest Technical College	522,500	596,314	1,155,530
M. J. Owens Technical College	201,300	229,738	445,183
Terra Technical College	2,062,500	2,353,869	4,561,301
Medical College of Ohio at Toledo	4,125,000	4,707,739	9,122,603
TOTAL	$ 18,516,300	$ 21,132,098	$ 40,949,539
Youngstown Area			
Youngstown State University	$ 2,227,500	$ 2,542,179	$ 4,926,205
Jefferson Technical Institute	68,750	78,462	152,043
TOTAL	$ 2,296,250	$ 2,620,641	$ 5,078,248